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AND

HOME FARMER.

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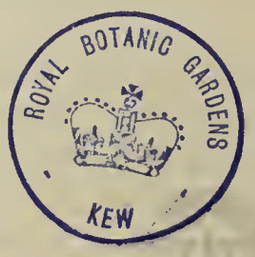
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TO OUR READERS.

ANOTHER half-yearly Volume of the *Journal of Horticulture* is completed, and its contents, to which the accompanying Index refers, we are induced to believe have not been less acceptable to our readers than those of previous issues embracing the same length of time.

Eighty-one of these Volumes are now completed, and we are glad to have made a favourable commencement with the eighty-second. The series, we think, contains a record of the true position of horticulture throughout the period of upwards of forty years; and, sound as much of the practice of the old master cultivators was, and agreeable as is this description of it, a great advance is noticeable as we approach the present time.

In variety of subjects treated, in the manner in which discussions are conducted, in the literary ability displayed by the greater number of writers, in the number and execution of the engravings, progress is apparent. This is gladdening to us, and encouraging.

The grand old gardeners of past days we can never forget, and some of their work in the garden, and, as registered in the pages in which it was presented to the world, has not been excelled; but they were few in comparison with their successors, who strive in a manner most creditable to themselves, and usefully to others, to disseminate information on the important and delightful occupation of gardening.

It is due to them that we should state that their work is appreciated by far more readers, extending over a much wider field, than they can be cognizant of. From gardeners old and young, from experienced amateurs and earnest probationers, we have letters conveying good wishes to all who share in the work which gives to them satisfaction, that helps them in their difficulties, aids in their successes, and contributes to the pleasure of their lives. From every part of the kingdom such testimony comes--from the continents of Europe and America, and from far distant Australian colonies. It is no expression of vanity when we say such testimony is pleasant to us; and it is mentioned to enable us the better to express our obligations to all our co-helpers who have effectively shared in maintaining so well he acceptability of the Journal, and placing it in the satisfactory position it occupies in the horticultural world.

We rejoice in the retention of old friends and the acquisition of new, to all of whom we tender our best wishes, and look forward with confidence to the interest and usefulness of the "old Journal" being fully sustained.

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IN THE VINERY.

PROBABLY some of the happiest hours in many a man's life have been spent in the vinery, and some also the most anxious—not to say painful. When all goes well, and the work of thinning, dressing, and otherwise attending to Vines can be done at the right time, and every day shows satisfactory progress in growth, the leaves increasing in texture and deepening tints of green, indicative of health, and when the fruit swells steadily onwards to maturity, no scalding or rusting of the berries, no red spider, thrips, or mealy bug attacking the foliage, and no fear of shanking entertained, then the hours spent in the vinery are happy hours to the amateur or gardener who delights in the culture of this princely fruit. But on the other hand, when work of various kinds presses to be done, and a little time can scarcely be snatched for tending the Vines; when laterals are rambling wildly and cannot be reduced; when the berries are wedging against each other and cannot be thinned; when insects are insidiously establishing themselves and cannot be subdued; when the dreaded shanking is expected and there is little hope of averting it, then the vinery is a source of deep anxiety, and the moments spent in it are moments of misery. Granting, however, the existence of the drawbacks indicated, and they are stern facts, there yet remains another fact to be recognised, for it cannot be ignored, that the best is not always made of the means at disposal in the management of Vines. Moments are lost that might be utilised, and errors committed that ought to be avoided, and especially as their avoidance is as easy as their committal.

Having had opportunities for spending a little time in vineries lately in different gardens and not in the same district, in which both good and bad management was apparent, and good and bad crops of Grapes advancing accordingly; when in some houses the temptation was great to linger and admire, and from others it was a treat to escape, perhaps a few hints appropriated under the circumstances may not be unacceptable if recorded as suggesting lines of guidance on the one hand that may possibly be of service to some who may not be pursuing the right path, or as warnings on the other for the benefit of the undecided who are in doubt as to which course to take in their procedure. As the leading object of these notes is neither to administer reproach to men who fail nor to accord praise to those who succeed in Grape-growing, the houses and the Vines in them shall be referred to under numbers, and it is hoped no one will seriously object to the arrangement.

No. 1 vinery.—A new range, admirably adapted for the purpose, and in which the Vines have been planted two years. Some of them have made good growth and are bearing prodigiously; others have a stunted appearance, with small light green, rusted or warted leaves, and the house on the whole is very unsatisfactory—one to be left as speedily as possible without hurting the feelings of the "manager." It is, in truth, more than he can manage. The garden has been enlarged, and Vines are new to a good worker and vegetable grower, who would be happier in the outside department, and might with great advantage to the owner of the garden and himself make room for a competent man for the "glass." Perhaps this will be so. The borders were made the full width of the house inside, also outside, and "lots of manure" was used. Strong fruiting canes were planted, the soil shaken from the roots, and the canes not shortened, while they were forced into growth in February. In that brief statement lies a jumble of mistakes. The borders were made too rich by half, and are now in a "soapy" state. They were five times too large to commence with; the Vines having been shaken out ought to have been shortened considerably, and they ought not to have been forced. It was entirely a matter of chance that some of them made a good start, and now because the others did not these that did are made to bear beyond their capacity. This will bring things to a level no doubt, but it will be a low level, and this good vinery, which cost £300, will not be well furnished till new Vines are planted in a new border of sound fertile loam, narrow for a year or two, and firm. But this is not the time for details in border making. The lesson to be profitably learned is this. Those amateurs, we will say, who have planted Vines this spring without shortening the canes, and which are pushing pretty strongly from the top and trying to grow, but the lower buds starting weakly, then standing still, will fail in their object if they do not gradually remove the growths from the top downwards, one or two to-day, another or two to-morrow, till the root force, which is weak, is concentrated on a growth at or below the base of the rafters; then by maintaining a genial atmosphere, and not admitting air through the front sashes till the top ventilation fails to keep the temperature below 90°, a good cane may possibly be "run up" during the season; but it cannot be if the weak root force is frittered away through a multiplicity of outlets (buds), the weakness of the growths from which will be in proportion to their number. When newly planted Vines are stubborn or weak, there, then, is the remedy—reducing the outlets, and maintaining a moist rather than a dry atmosphere, through being chary of front ventilation till the canes get strong, then they may have air in abundance for ripening them.

Vinery No. 2.—Also nearly new, but the Vines cover the roof. The owner is their gardener in this case, and, like many another amateur, was afraid to thin both laterals and fruit. It is very evident the growths were overcrowded last year, hence the weak laterals this, and these when seen were far too numerous. The Vines are not 3 feet apart, yet there was an average of three laterals to each foot run of rod. The spurs are in places not more than 6 inches asunder, with, in most cases, two laterals from each, duly topped beyond the bunches, only one however from a spur bearing fruit, this bunch having been removed from the other because the owner of the Vines had read of that being a "good plan." The plan is good enough in many vineries, but in this one there is only one right name for it—bad. With half the laterals removed the foliage would be too crowded and the Vines weakened instead of strengthened, for let it be clearly understood that a dozen imperfect leaves cannot compensate for the absence of one fully developed and capable of doing its important work.

The laterals should be so thinly disposed that the leaves on them can attain the full size of which they are capable without crushing against each other, or in other words there should be space between them so that glints of sunshine can pass through into the house. Let amateurs take that as a guide, and if the roots are duly supported, and the foliage kept fresh and clean, healthy Vines must of necessity follow, provided the serious evil of overcropping is avoided. In the case in question the gradual removal of superfluous growths went steadily on for a week, and now the Vines are in a fair way for maturing a good crop of fruit with an increase of strength for better work next year; had they remained unrelieved they would have been seriously injured before the end of the season, and next year's crop practically worthless.

When sufficient leaves are produced on the laterals for occupying the space at disposal, with a little to spare between them, all subsequent growths that push from the axils of the leaves should be pinched out as soon as they can be seized with the finger and thumb. It is not in the least necessary to pinch all these sub-laterals to the orthodox "one leaf;" this may be done with those starting from the

ower two or three joints for strengthening the buds there, to which the Vines will have to be pruned ; but all axillary growths above them may be removed entirely, and if the main buds push pinch these too, and those below will be the stronger. This is a simple and safe way of preventing a good deal of overcrowding and concentrating strength in the main leaves, on which everything depends. It is not the practice generally taught, and the timid may hesitate to follow it, but it is safe and sound for all that, as any one may prove by a few experiments. It is not a tentative procedure with scores of good growers, and should be adopted by all when the laterals cover the roof rather more closely than is desirable, as is the case in the great majority of houses devoted mainly to the cultivation of Grapes.

Vinery No. 3.—This is a 20 feet long house with seven Vines in it, belonging to a clergyman and managed by a groom and gardener. He has managed them fairly well, the border outside, where the roots are, being thickly covered with manure. This is put on when the Grapes set every year and the loose raked off when they are ripe, an inch or two of fresh loam being then spread on the border. That was a new rule to me, and I am certain not a bad one. The Vines were in excellent health, but overcrowded, though the laterals were quite a foot asunder along each side of the rods. With such strong growth and large leaves the distance between the spurs should be 18 inches ; but as this cannot be very well managed now the man was advised to remove all the sub-laterals except from the two or three lowest axils, also to only allow each alternate lateral to bear a bunch. As the crops will then average nearly or quite 2 lbs. to each lineal foot of rod it will not be bad, and in fact much better than if twice the number of bunches were allowed, as in this case the Vines would be overweighted, the Grapes not coloured, and shanking probably induced. But though there were many, too many, fine bunches, several of them were being spoiled, from a gardener's point of view, by rough handling in thinning. This was in progress and ought to have been finished, for it was difficult to insert the scissors between the berries without touching them—a sure proof of the work being too long delayed. The bunches thinned, moreover, had a shiny appearanee, the result of rough handling, and too many berries had been taken from the tops of the bunches.

As the man appeared anxious to learn he was shown how to thin a bunch of Grapes. One was chosen that he was afraid to touch, as the berries were so small, yet they were fairly set, and that was enough. The berries stood quite clear, and it was easy to work the scissors between them. It was a fine bunch of the old favourite, the Grape of Grapes for grooms and gardeners and most amateurs—the Black Hamburgh. It would have been a symmetrical bunch and "tapering" but for a great shoulder jutting out from the top, half an inch above the rest, and half as long as the bunch itself. This was quickly cut off. The man picked it up and looked scared, but he could not put it on again, fortunately for the bunch, which the sprawling shoulder would have spoiled. It was a well set bunch, and fully two-thirds of the berries were cut out. A cedar pencil was held in the left hand for gently raising the shoulders, and snip, snip, snip went the scissors in the right, chiefly working under the shoulders and inside the bunch, no berries being cut out that had room to swell upwards and outwards. Only quite a few were taken from the upper side of the top shoulders, as it is surprising how the Grapes find room there, curling back and piling themselves, so to say, round the stalk ; still, their probable size should be anticipated and room provided accordingly, though overthinning there is a common mistake, as is underthinning beneath and in the centre of the bunches. When the berries are as large as good-sized peas it ought to be easy to pass a thick pencil round them without touching, as the shoulders are held up for the purpose. When they fall into position this could not be done, but room is provided for their swelling all the same, and they may safely be left to occupy it and push their way into the best positions. Tying up the shoulders may be necessary in the case of very large bunches of above 4 lbs., but a great deal of time is wasted in work of that kind on those that are smaller, and their appearance marred rather than improved. I wonder if Mr. Wm. Thomson of Clovenfords ties up the shoulders of his 10,000 to 20,000 fine bunches, but imagine he does not, and if his average is maintained growers may be satisfied. And this reminds that in many vineries in which I see the best Grapes Thomson's Vine manure is highly spoken of ; but let it be said emphatically that the effects of the best manure ever compounded and the best soil that can be collected are quite nullified if overcrowding, overcropping, injudicious ventilating, and insufficient watering are permitted, that being the certain way to grow good crops of insects and bad crops of Grapes.

But a pause is imperative. If I were to describe the condition of the Vines in every garden entered during the past two months and detail the routine that led to success or failure there would be no room for anything else in the Journal, and that would never do. The subject, however, may, perhaps, be resumed, and in the meantime if anyone desires a hint on any special point let him state his case ; if he wishes to ask any questions let him ask them ; if he prefers to grumble at anything that is said let him grumble, as it all does good in the end.—EXPERIENTIA DOCET.

SELECT ALPINE PLANTS.

ALPINE PHLOXES.

IT is not many years since that the species and varieties figuring under this head were comparatively few in number, and while the species remain about the same to-day, the varieties have increased considerably, bringing with them new and pleasing shades of colour, while for free growing and flowering they are all that can be desired. These latter remarks apply more especially to the new varieties of setaeea, which have enriched our gardens in spring to some considerable extent. The whole of the varieties of setacea, as well as frondosa, nivalis, and Nelsoni, form dense prostrate cushions, which in May and June are completely hidden by the numbers of flowers produced. Nothing can surpass them for effect in the spring garden, and where this is indulged in to any extent some of these Phloxes should be among the number.

For the convenience of those desirous of securing the most distinct varieties, I will give what I regard as the best, all points considered :—atro-purpurea, dark rosy purple, very free and a good doer ; The Bride, pure white, with a ring of scarlet spots in the centre, a very telling variety, habit very compact, and an abundant bloomer. Compacta well bears out its name, and produces rose-coloured flowers freely. Vivid ; in point of colour this is the most effective. It does not produce flowers as large as some, but is remarkable for freedom, while for colour it stands alone ; its rigid tufts, studded with rosy scarlet flowers with deeper centre, render it very conspicuous. The foregoing I consider the best and most distinct of the forms of setacea, apart from which there are several which cannot be omitted. Among these Nelsoni stands first, and is covered with pure white masses of bloom, a most charming plant ; and frondosa, with rosy pink flowers. All these are very similar in general aspect, quite hardy and most effective.

But what I regard as the gem of all the Alpine Phloxes is P. amœna. It is a most lovely plant in effect, and so continuous a bloomer, according to the season, it flowering in April or very early in May, and continues a long time in perfection. I have had this one in flower for six months, and had as fine flowers in October as in May ; but to get this result it should be divided as soon as it has ceased flowering, and planted in good rich soil. Attend to watering and so forth, it will speedily recover, and show signs of flowering again. Its full height is 6 inches ; the colour of the flowers a bright pleasing pink, and to see a bed some 40 feet long carpeted with this lovely plant and in full flower, is one of the prettiest sights in spring. The only other that calls for mention now is that usually sold as verna, but which correctly is reptans. It has also been distributed under the name stolonifera, but this species has bluish or slate-coloured flowers, while verna (reptans) has reddish-purple flowers. Both plants, however—*i.e.*, stolonifera and reptans, possess the same habit, hence the confusion probably. All the varieties of setacea and their allies may be increased by division, either in autumn or spring after flowering. Cuttings of all these taken when about 2 inches long—that is, of new growth and with a heel attached, root readily in moist sandy soil, in handlights or frames kept close and shaded. Amœna may be had in

plenty by division after flowering in May, while reptans will root readily if the runners are pegged on the surface of the soil, and may also be increased by division.

Every person who takes an interest in the cultivation of these plants should, I consider, take an interest in making the best possible display of them also. By this I mean that they ought not to be content by merely purchasing a plant and letting it do its best. That is not gardening in its truest motives, nor is it likely that the best results will be forthcoming for such scanty pains. Let all who grow plants make the most of the space at command, and few plants form a better starting point than these Phloxes. An amateur may buy one plant, and in three years it may make a nice tuft, but if he had put in say fifty cuttings each year in the manner I have described above, and only succeeded in rooting half of them, and potted them singly in small pots, what a grand stock of such things he may possess! But amateurs will wonder of what service such a stock may be to themselves, but I will explain. These Alpine Phloxes require to be seen in large spreading masses several feet across, and to quickly obtain these handsome floral carpets they should be increased freely. Established in small pots, and planted out about 6 or 8 inches apart each way, they would soon form a mass of colour such as is rarely seen, and make the garden a perfect paradise. Take Phlox Nelsoni and Vivid, and treat them as suggested, what a lovely picture they would make, especially if planted on a rocky surface, such as a rockery border; the effect would be natural and most pleasing, and by adopting this course throughout what a rich and varied display one could easily obtain by first ascertaining the best plants for such a purpose.

AUBRIETIAS.

Another group of easily grown Alpines are the Aubrietias. These, however, have been referred to so recently in the pages of the Journal by "A Londoner" that it would appear superfluous to say more. I cannot refrain from drawing attention to the happy result so clearly set forth in the illustration there given. Of two plants Iris pumila cœrulea, with Aubrietias nestling at its base, what more natural or what more beautiful than that charming combination, and yet but one of the many equally charming which may, and which really ought to be, of more common occurrence in our midst. After all it is not an endless variety which gives the effect, but the few carefully studied and judiciously blended together.—J. H. E.

ORTON HALL.

Orton Hall, about two miles from Peterborough, is the seat of the dowager Marchioness of Huntly, a great lover of plants, who has collected many hardy species on the Alps and elsewhere for establishing at home. The rockeries and borders are filled with hardy flowers, and the grass, where the lawn is not closely machined, is in places full of bulbs. When these push up in myriads in the spring, followed closely with hardy Orchises, which abound, a stroll round the semi-dressed grounds is very enjoyable. The grounds are, however, always "furnished," and are perhaps never more beautiful than when the numerous and fine Conifers are wreathed with fleecy snow, or resemble fountains and cones of silver by the hoar frost glistening on every spray and leaf. The late Marquis of Huntly was a great planter, and as the soil is good most of the trees have made splendid growth, and Conifers are thus the commanding feature of Orton.

When going north a few weeks ago on a visit to Belvoir it may be remembered I called on Mr. Harding, the gardener, and we spent a few pleasant hours among the Conifers, ascertaining the heights of some in a very simple and certain manner. As the plan adopted may be worth making more generally known, a sketch of the home-made appliance is given in fig. 1. Mr. Harding's tree measurer on the right of the figure consists of a staff 6 feet long pointed for pressing into the ground. To the centre of the staff a piece of half-inch board 12 inches wide and exactly square is affixed with screws. The diagonal cross lath is 3 feet long and perfectly straight. It may be fixed or movable; if the latter, a small batten being screwed on the board for it to rest on when in use. The plumb line is indispensable, as no correct measurement could be had without it. The plumb-bob may be about the size of a small walnut, the string passing through its centre, then knotted to make all secure.

In measuring the tree the staff is placed at a distance from it so that with the plumb exactly perpendicular, the cross lath points to the top of the tree, the person taking the "sight" resting on one knee or reclining to bring the eye to the bottom of the lath. The lath is then drawn to the ground, where the end rests at C in the figure, or if the lath is fixed a string will answer the purpose of extending the sight line to the ground. From this point C to the centre of the trunk, not the face of it nearest the point, but the middle, will represent the actual height of the tree; or to put the matter concisely, the horizontal line, A C, is equal to the vertical A B; and if the tree were blown or cut down its top would follow the course shown by the curved line and rest at C. If a tree has several leaders, as Pinus excelsa and some others often have, the sight should be taken of the most central one, or nearest in perpendicular with the root of the tree, not a side branch that may happen to be a little taller, as the base line would then not give the true height of the specimen. On level ground it is easy to perceive that altitudes of a number of trees can be quickly ascertained. When the ground is irregular provision must be made for having the line level from the root of the tree, or A in the figure to C. The central board, it may be repeated, must be a true square, the perfectly straight sighting lath resting across it exactly from corner to corner, as the least deviation will lead to error, and the weight must hang positively plumb, as not otherwise can the measurement be accurate. Any handy man can make an appliance of this kind—at least Mr. Harding made the one that answers its purpose so well.

The sizes of a few of the Orton Conifers may now be given. Pinus Jeffreyi, several specimens, foliage a foot long, and straight trunks, the tallest 60 feet in height, girth 6 feet 3 inches. Wellingtonia gigantea, several over 60 feet high, the tallest 67 feet, girth 14 feet 6 inches, produces cones in abundance, but as yet no fertile seed. Abies cephalonica, 55 feet high, and 5 feet 6 inches in girth. A. Pinsapo, 57 feet high, 7 feet in girth, a good specimen. Abies Nordmanniana, 53 feet high, 5 feet in girth, a beautiful tree, and has produced plenty of cones with seeds about 10 per cent. fertile. A. bracteata, 39 feet high, 5 feet 3 inches in girth, a noble looking tree. A. amabilis, beautiful foliage, resembling A. Nordmanniana, but more dense and silvery beneath, 34 feet high, and 4 feet in girth. This species has not yet produced cones. A. Morinda (syn. Smithiana), with weeping habit, 51 feet high, and 5 feet girth. A. Douglasi, 65 feet high, 7 feet 6 inches in girth. A. lasiocarpa (syn. concolor), a grand specimen, feathered to the ground, 54 feet high, with trunk 7 feet 9 inches in girth, one of the best. A. grandis, 60 feet high, and 6 feet 3 inches in girth. A. pectinata, the common Silver Fir, 85 feet high, and 13 feet in girth, an old tree. A.

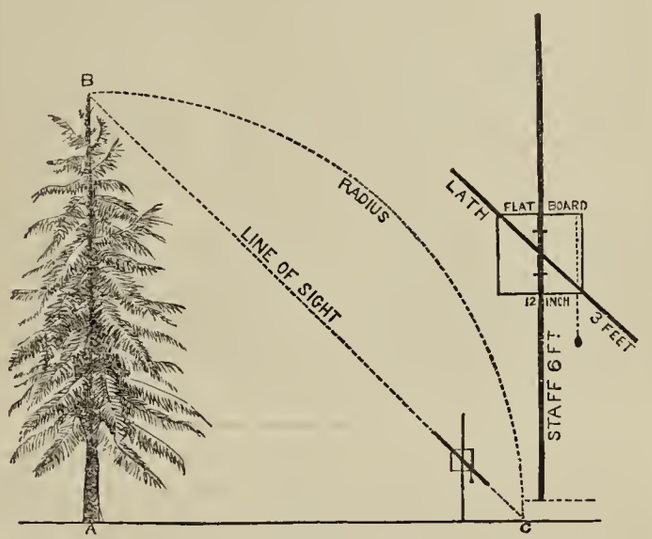


Fig. 1.—Measuring Trees.

nobilis, 40 feet high. A. magnifica, 10 feet high, with glaucous foliage in the way of nobilis, but distinct from that beautiful kind. Cedrus Deodara, 44 feet high, with a good trunk, 7 feet 6 inches in girth. C. atlantica, a beautiful specimen, with glaucous foliage 56 feet high, and 8 feet in girth, produces handsome cones in abundance. Cedars of Lebanon are also good, about 60 feet high.

Libocedrus decurrens (known as Thuia gigantea) is represented by handsome specimens, the tallest 48 feet high, 6 feet 4 inches in girth; small cones produced some years in abundance with fertile seed. Pinus excelsa, distinct, 59 feet high and 9 feet 3 inches in girth, has produced good seed. P. Sabiniana, 55 feet high and 7 feet 9 inches in girth. P. macrocarpa, handsome foliage, 51 feet high and 8 feet in girth. P. ponderosa, 60 feet high, very straight trunk, 5 feet 8 inches in girth. The red male catkins are very showy in June. P. Laricio, 57 feet high and 8 feet in girth; produces good seed. Taxodium sempervirens, 66 feet high and 12 feet 6 inches in girth. Salisburia adiantifolia, 32 feet high and 3 feet 6 inches girth. Cupressus Lawsoniana, a good specimen, 38 feet high; produces good seed freely. C. macrocarpa, 57 feet high and 8 feet girth; produces good seed. Thujopsis borealis, 40 feet high, a distinct and handsome tree. Torreya myristica, a tree with curious fruit about the size of a walnut produced some years in abundance, 18 feet high, 60 feet circumference spread of branches; a quantity of young trees has been raised from this plant. Thuia gigantea (also known as Lobbi), Lobb's Arbor Vitæ, 48 feet high; a tree that thrives well, producing trunks as straight as an arrow, handsome foliage, useful for decoration; healthy plants make 3 or 4 feet leaders in one season; produces good seed abundantly, from which many hundreds of young trees have been raised, some of the best at nine years old being now 15 feet high. This is the yellow Cedar of the settlers of British Columbia and N.W. America; its timber is good and fine grained, and Mr. Harding regards it as the timber tree of the future for this country. It should be added that all girths were taken at 1 foot from the ground.

There are numerous other specimens of various Coniferæ, a good

plant of the Irish Yew, Taxus baccata var. fastigiata, T. adpressa, Biota pendula filifera, 18 feet high, pendulous, and very distinct. Juniperus chinensis, J. excelsa, J. excelsa stricta, J. squammata, an old plant, spreading low bush, not exceeding 3 or 4 feet in height. Cupressus sempervirens, Thujopsis dolabrata, Pinus cembra, P. Strobus, and old Scotch Pines. Sufficient has been said to show the noteworthy character of the Orton Conifers, except that a few words must be devoted to the Wellingtonias. Though in the above list the height of the tallest specimen is given as 67 feet high, 14 feet 6 inches girth, there are many over 60 feet in height. All were raised from seed on the place. In the avenue and about the grounds there are upwards of 300 specimens. They were planted in 1860 and 1861, the plants being at the time 3 or 4 feet in height. The Wellingtonia avenue is 36 feet in width, with a gravel drive up the centre 12 feet wide, the trees being set 30 feet apart. Its length in a straight line or view is 700 yards, containing about 140 trees, but a continuation of this drive at one end to the right hand, and another at the other end to the left hand, makes it over a mile in length, but Wellingtonias are not planted all the way. One of the best furnished and symmetrical trees stands by itself on the lawn near the rockery, and is now 57 feet in height, and by its vigorous annual growth promises to make the best tree in the grounds. This and many others have been invigorated by heavy top-dressings of manure and soil. Some of the trees have grown with much greater freedom than others, the latter having presumably been raised from cuttings, the former from seed. Plants from Thuia gigantea raised from cuttings by Mr. Harding do not approach in freedom of growth others raised from seed, though he knows which cuttings to select for making the best trees. It may be added the timber of Wellingtonias is of practically no value, several large trees having been cut down at Orton, but the wood is spongy and destitute of durability.

The rockbound dells and wilderness ferneries are extensive and picturesque. The are embowered in foliage and delightfully cool in sultry weather. On some of the large moss-covered boulders seeds have fallen from trees of Thuia gigantea above and freely germinated, and one tree clinging to the perpendicular face of the rock is 4 or 5 feet high. It is secured in its position, and has a singular effect. The roots have extended in the moss to the ground, and the tree is thus established. A large rockery has been made in the open for alpine and other plants suitable for the position, about 700 species are growing at present. A small Italian garden with clipped Yews adjoins the mansion, to which is attached an elaborately built conservatory, and the parish church with its Ivy-clad tower is only a few yards distant, and is an interesting feature of the beautiful grounds. There is a large and excellent kitchen garden of four acres exe liently managed, vegetables and fruit being abundantly produced. Grapes, Cucumbers, and Tomatoes are well grown, also plants for decorative purposes, and a fine Maréchal Niel Rose will be referred to on another occasion. Mr. Harding is a practical and industrious gardener, and a credit to the craft to which he belongs.—A Londoner.

CYCLAMENS AT BESBOROUGH COURT, CORK.

Cyclamens are too seldom seen well grown in gardens, and it is a pity they should be so greatly neglected, as their usefulness in the winter and spring months is beyond question. These plants have been of a very interesting character here for the last two years, being greatly admired by many visitors. A span-roof house is devoted to them, and the treatment is as follows:—After flowering they are removed to a cool house. We do not adopt the general system of drying, but just keep them in an intermediate state. They remain in this position until the middle of August, when they are shaken out and repotted. The compost given consists of eight parts of loam shaken out, one-third of peat, and a third of leaf mould, with a liberal dash of coarse sand; also adding a 3-inch potful of soot and the same quantity of fish manure to every bushel of soil, mixed thoroughly.

We sow seed every year, because we discard all plants that are over two years old. At this age we find no difficulty in getting them to start, whereas plants three and four years old often are very stubborn in starting. The pots mostly used are 6 inches in diameter. Some were placed in 8-inch pots; they certainly made very fine plants, but they did not flower any better than those in the 6-inch pots. I counted on several plants in the latter size over 160 flowers fully expanded.

The place for starting is a cold pit; there we have a little fermenting material, just enough to cause a slight bottom heat. On this they are placed, then supplied with tepid water, after covering the crowns with a little sifted leaf mould, which keeps them cool and moist all through the starting period, assisting growth. This pit is shaded from hot sun, providing just a chink of ventilation when the temperature rises to 75°, syringing and closing about 8 P.M. As the leaves appear through the leaf mould it is removed from the surface of the pot. Then the plants are shifted to a cold frame, standing them on pots to prevent worms or any insects entering the bottom of the pots. More air is given then to obtain sturdy plants, closing with a little sun heat in the afternoon. As the evening approaches the lights are thrown off if there are no prospects of rain, as the dew seems to be very beneficial to them. By the end of September the pots are washed and staged in the flowering house. Ventilation is then provided according to the weather, damping between the pots and misting the plants over the foliage on fine days. As the flowers become visible a little artificial heat is given, keeping ventilation on constantly day and night. By that means the plants do not become drawn, and a circulation of air prevents the flowers damping, which they are very liable to do. The temperature at night never exceeds 50° to 55°, with a rise of 5° by day.

The watering is a very important point to be taken into consideration. If the soil is allowed to become dry the plants will lose all their flowers, whereas, on the other hand, if kept too wet they lose their roots; then the least exposure to sun causes the foliage to flag. They are subject to the attacks of thrips, and we use a little tobacco powder applied with a distributor and syringed off the next morning.—Foreman.



REPORTS OF SHOWS.

As it is impossible to make special arrangements for reporting all the shows that will be held during the present month, we shall be obliged by receiving as early as is convenient brief accounts, with the results in the leading classes, from secretaries of societies or friends who may visit exhibitions in various parts of the country, and a previous intimation as to when the notes may be expected would assist us materially. Long newspaper reports of local shows and complete lists of prizewinners cannot, as a rule, be inserted. The general character of the exhibits, with particulars of the chief classes, are preferable to the majority of our readers. When more than one report is sent of a show, as occasionally happens, that which arrives first is usually inserted.

ROSE SHOWS IN 1888.

July 5th.—Bath, Farningham, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Gloucester, Ipswich and Oxford.
" 11th.—Ealing, Glasgow, and Tunbridge Wells.
" 12th.—Birmingham, Carlton-in-Lindrick, and Winchester.
" 14th.—Eltham, Manchester, and New Brighton.
" 16th.—Christleton and Newcastle-under-Lyme.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).
" 24th.—Tibshelf.

In the case of Birmingham and Glasgow, where the show extends over two days, the date of the first day's exhibition only is given. —Edward Mawley, *Rosebank, Berkhamsted, Herts.*

AMATEURS AND TRADING.

Just as the war of the Roses is commencing, I hear that strife has broken out amongst the members of the N.R.S. in consequence of one of the leading amateurs having sold a large quantity of Roses, and I fear he cannot say it is the first sale. Let us hope the Committee will at once sift the matter to the bottom, otherwise the N.R.S. is doomed. —Amateur.

ROSES AT KETTERING.

At the annual Show held on the 2nd inst. cut Roses were the leading feature. In the class for forty-eight blooms Messrs. G. & W. Burch, nurserymen, Peterborough, were first, their stand containing some very fine flowers indeed, such as Marie Baumann, Queen of Queens, Marquise de Castellane, Mdlle. Marie Verdier, Grace Darling, A. K. Williams, Sunset, Captain Christy, Mdlle. Marguerite D'Ombrain, Camille Bernardin, Madame Gabrielle Luizet, Madame Lacharme, Madame Bravy, Niphetos, M. Noman, Ulrich Brunner, Perle des Jardins, Lady Mary Fitzwilliam, Magna Charta, &c. Second, Mr. W. H. Frettingham, nurseryman, Beeston, Notts; third, Messrs. W. & J. Brown, Wolthorpe Nurseries, Stamford. Mr. John House, nurseryman, Peterborough, entered for competition, but through losing the train did not reach the Show until after the awards were made. He had some very fine blooms, and a box of William Allen Richardson finely coloured, a variety he grows with great success. In the class for twenty-four varieties Mr. H. Watt, gardener to G. L. Watson, Esq., Rockingham Castle, won first with fairly good blooms, but all unnamed. Mr. Watt also had the best twelve Tea and Noisette Roses, also without names. The best twelve Roses shown by amateurs came from Mr. Alfred Warner, Pytchley, they also being unnamed. In the class for six varieties of Tea Roses the Rev E. Gates, Pytchley, was first with good blooms of Madame Bravy, Souvenir de Gabrielle Drevet, Madame Lambard, Jean Ducher, Catherine Mermet, and Souvenir d'un Ami. Second, Mr. A. Warner. Special prizes for Roses shown by amateurs and cottagers were offered by Messrs. W. & J. Brown, also by other gentlemen.

BROCKHAM.

On Thursday, June 28th, the Brockham Amateur Rose Association held its twenty-third Show of Roses in the grounds of Holmwood Park. This is the fourth time that Mrs. Gough Nichols has invited the Association to partake of her hospitality, which on this occasion was of a particularly generous character. Adjoining the large marquee where the Show was held, a long tent capable of seating between two and three

hundred persons had been erected, with a carpeted wooden floor, a roof impervious to rain, and the walls fitted with windows and curtains, and lined throughout with chintz of a very tasteful pattern. In fact, it was a very pretty little theatre, and on the platform at one end Mr. Grossmith, from the Savoy, gave several well-known and very amusing sketches. A very large and appreciative audience was present, in spite of the heavy rain, and had it not been for the weather the room would scarcely have held the many friends whom Mrs. Gough Nichols had invited to witness the entertainment. At the other end of the room the Hungarian Band, which had also been engaged, played a selection of their well-known and beautiful stirring music from time to time during the intervals of Mr. Grossmith's entertainment. The house was, with a kindness characteristic of Mrs. Gough Nichols, thrown open to her friends, and every kind of refreshment was provided. A particularly pleasing effect was produced by the removal of the doors throughout the long corridors, and different sorts of Iris and other flowers with drooping Grasses being suspended in pieces of bamboo. The house, accordingly, which is filled with very many plants of beauty and value, was occupied by a continual stream of visitors.

Holmwood Park is three miles from Dorking. It was formerly the residence of Francis Seymour Larpent, Esq., Judge Advocate-General to the Forces in the Peninsula of Spain, under the late Duke of Wellington. It was subsequently purchased from Baron de Hochfield Larpent by the late John Gough Nichols, Esq., F.S.A., who for many years was the editor and proprietor of the "Gentleman's Magazine," and the author of numerous antiquarian treatises.

The house (which, by the way, is roofed with Horsham flags) stands in the most beautiful and picturesque part of Surrey near Leith Hills and Holmsdale. In years gone by it joined the extensive woods of the Duke of Norfolk, which reached as far as Arundel Castle. Designed and built by Mr. Larpent, it was formerly a warder's lodge belonging to the Earls of Arundel, and is now surrounded by a park-like common of 800 acres. The church, built and endowed by Mr. Larpent, stands on the hill above, and there are beautiful views in the distance of the Reigate Hills on one side and the Redland Woods on the other.

The Rose Show was held in a meadow opposite the house. There are sixty-two members of the Association, and of these twenty were exhibitors, two more than last year. Considering that Rose-growers hitherto have this season been discouraged by nearly every plague that the "queen of flowers" is heir to, it was no small surprise to see such a large Show and such a good one. It helped the attractiveness of the Exhibition to see at the entrance a grand box of thirty-two new and other Roses from the well-known gardens of Messrs. George Paul & Son of the "Old Nurseries," Cheshunt, containing Mrs. John Laing, Madame Bois, three red seedlings (raised by Mr. Geo. Paul from Beauty and Grandeur of Cheshunt), Lady Alice. Inigo Jones, Comte de Paris, Madame Honoré Defresne, Lady Helene Stewart, Silver Queen, all new, and the following:—Madame Treyve, Marie, Château des Bergeries, Lady Mary Fitzwilliam, Souvenir de Gabrielle Drevet, Madame Henry Pereire, Gloire Lyonaise, and American Beauty. In addition to these Roses, Mr. Appleby of the Boxhill nurseries had, as he always does, brought very many decorative plants, such as Caladiums, Crotons, Dracænas, Ferns, and Pelargoniums, which made the Show tent very bright, and two boxes of H.P.'s and Teas, comprising amongst others, Souvenir d'un Ami, Niphetos, Rubens, Clotilde, and Madame Welch, Ulrich Brunner, Xavier Olibo, H. Schultheis, Madame G. Luizet, and Général Jacqueminot. Mr. E. Claxton of The Rosery, Allerton, Liverpool, had also actually sent his man with two grand boxes of Teas, not for competition, including Anna Ollivier, Souvenir de T. Levet, Jean Ducher, Innocente Pirola, Madame Lambard, Madame de Watteville, and Francisca Kruger. The three Judges were T. W. Girdlestone, Esq., on the Committee of the N.R.A.; Mr. George Paul, from the Old Nurseries; and the Rev. A. B. Alexander, late Hon. Sec. of the Farnham Rose Association, and they were unanimous generally in awarding the prizes as follows:—

For twenty-four distinct blooms (three competitors), first prize, gold medal of the N.R.A., awarded to the Rev. Alan Cheales for a fine box, including Star of Waltham, Princess of Wales, Duke of Edinburgh, Marquise de Castellane, Violette Bouyer, Charles Lefebvre, La France, Glory of Cheshunt, Belle Lyonaise, A. K. Williams, Lady Mary Fitzwilliam, Pride of Waltham, Reine Marie Henriette, Maréchal Niel, Madame Thérèse Levet, Jean Ducher, Le Havre, Rêve d'Or, Fisher Holmes, Dupuy Jamain, Madame Bravy, Duke of Teck, Catherine Mermet, and Horace Vernet. The second prize for 24's went to Mr. Cuthell for a good box containing, amongst others, Magna Charta, Captain Christy, Etienne Levet, M. Noman, Countess of Rosebery, M. E. Y. Teas, Madame Gabriel Luizet, and Abel Carrière. Mr. F. T. Wollaston also had a good box in this class, which did him credit.

For twelve Teas in class 2, Mr. Cuthell took first prize (silver medal of N.R.A.) for Jean Ducher, Marie Van Houtte, Catherine Mermet, Anna Ollivier, Princess of Wales, Souvenir d'un Ami, Rubens, Madame Lambard, Perle des Jardins, Madame Watteville, Jules Finger, and Caroline Kuster. The second prize (bronze medal of N.R.A.) was won by Mr. Horne for Perle des Jardins, Madame Bravy, Maréchal Niel (grand bloom), Anna Ollivier, Climbing Devoniensis, Madame Camille, and other varieties. The Rev. A. Cheales was highly commended by the Judges for a very good box. For nine single trusses Teas, N. or H.P.s (same kind), Mr. Cheales won the first prize for Maréchal Niel, and Mr. Horne was second for Annie Laxton. For four triplets, the Rev. Alan Cheales had the first prize for Violette Bouyer, A. K. Williams, Lady Mary Fitzwilliam, and Reine Marie Henriette. The second prize went to Mr. Cuthell.

In division B, class 1, for twelve single blooms, distinct, Lady Lawrence won the N.R.A. gold medal for twelve very fine blooms of Lady Mary Fitzwilliam, Earl of Pembroke, Edouard Morren, Jean Pernet, A. K. Williams, Anna Ollivier, Marie Baumann, C. Bell, Général Jacqueminot, Eugène Furst, Madame M. Roederer, and M. Noman. Mr. Thompson took the second prize, and in her box was a fine bloom of Sultan of Zanzibar. The Hon. Lady Ryder was highly commended. For six distinct blooms of any sort Mr. Leopold Seymour received first prize, and Mr. Hatch second. For six of the same sort of any class of Rose Mrs. Mortimer carried away the first prize for Souvenir d'un Ami, and Mrs. Thompson second prize for the same Rose. In the class of three triplets Mr. Leopold Seymour had the first prize, and Mr. Hatch second.

For the decorations in division C there were altogether sixteen exhibitors. Mr. Cuthell won the first prize for a dinner table decoration of Tea Roses and Ferns that was well arranged and in excellent taste. Mr. Bruce Nichols took second prize for two low baskets, well arranged, but with too much Fern. For the drawing-room decorations, which displayed both good taste and genius, Mrs. Benecke had the first prize for a ball wicker basket, containing Spiræa, Aquilegia, Fern, and Passion Flowers, and Begonia. For a pretty simple arrangement of pink Pelargonium, Fern, and white Geranium, Mrs. Bruce Nichols received the second prize, while for a very large arrangement in Pœonies and Copper Beech Miss Perkins took equal second prize. The buttonhole bouquets were prettier and more tasteful and suitable than usual, though some were too small and others too large. Mrs. Cuthell, Mrs. Thompson, and Miss Carter Perkins took the first, second, and third prizes respectively.

For the first time for twenty-three years the Treasurer could not attend the Show. His absence was greatly felt, and the fullest sympathy went with him. It only remains to say that—1, The Show was an exceedingly good one. 2. The Teas were unusually well represented. 3, All the classes had a fair number of competitors. 4, The old winners did not have it all their own way. 5, The number of visitors was very large. 6, The luncheon to the Committee unusually good; 7, and the speeches of the three Judges thereat were short and to the point.—A. B. Alexander.

RYDE.—June 28th.

The fourth annual Exhibition of cut Roses and other flowers was held in the Town Hall, Ryde, Isle of Wight, on Coronation Day, June 28th. The day is observed as a general holiday throughout the Island, and, notwithstanding the many counter attractions, and the inclement weather, the Exhibition drew together a large number of visitors, who seemed to take a lively interest in the excellent display of flowers. The Exhibition was opened by the Mayor (R. Colenutt, Esq.), accompanied by other members of the Corporation, and Mr. J. Eley, the efficient and courteous Hon. Secretary. The wet weather the day previous and on the morning of the Exhibition no doubt prevented many from taking part in it; nevertheless, it was satisfactory to find that the exhibits, in number and quality, were quite equal to those of the previous year, and much better than we expected to see in this late and unfavourable season.

In the open class for twenty-four cut Roses, distinct, the first prize, a gold medal offered by the National Rose Society, was won by Mr. R. E. West, Reigate; and the second prize, the silver medal of the N.R.S., was awarded to Messrs. W. & G. Drover, Fareham. The first prize stand contained good blooms of M. E. Y. Teas, Countess of Rosebery, Marquise de Castellane, Marguerite Brassac, Mrs. Baker, &c.; and in Messrs. Drover's stand were good blooms of Pitrod, a good dark Rose, Cannes la Coquette, Souvenir de Rêné Lévêque, Duchess of Hatwell, Rosy Morn, Mrs. Laxton, &c. Messrs. Ewing & Co., Havant, also exhibited in this class. In the class for twelve, Captain Ramsay, Fareham, was first with good blooms of Earl of Pembroke, Merveille de Lyon, Lady Mary Fitzwilliam, Souvenir d'un Ami, and Amazone, a beautiful yellow Tea. The second was awarded to Mr. D. Seaton, Bitterne. The stands of Tea Roses were very fine, Mr. D. Seaton winning first honours for twelve, showing Grace Darling, Madame Lambard, Rubens, Madame Cusin, very fine. Second, Mr. Ridout, Woodhatch Gardens, Reigate; and Messrs. Ewing & Co. were highly commended.

The chief competition in the local classes was for two silver challenge cups presented by the Rev. Canon Girdlestone, and offered as the first prize in the twenty-four, and the first prize in the twelve class, both of which have now been finally won by Mr. G. Pack of Ryde, whose exhibits were amongst the finest in the Show. In the class for twenty-four there were five competitors, and in Mr. Pack's winning stand were good blooms of Glory of Cheshunt, Violette Bouyer, Dupuy Jamain, Marie Baumann, Isaac Perrière, Chas. Lefebvre, Mrs. Baker, and Madame Victor Verdier. Mr. J. O. Brook, Ryde, also exhibited well, President Vuillamy and Ulrich Brunner being very fine. In Mr. Pack's winning stand of twelve blooms were good examples of Mrs. Caroline Twailes, Violette Bouyer, Merveille de Lyon, and La France. Mr. Brooks was again a good second in this class. Mr. Pack was also first in another class for twenty-four distinct varieties, with Mr. E. Ratcliffe, Ryde, second. In the leading stand were good blooms of Madame Marie Finger, Lady Mary Fitzwilliam, Duke of Edinburgh, and Mrs. Baker. With twelve Teas, four varieties, Mr. G. Williams, Gateombe, was first, and Mr. Brooks a close second: and in the class for six Teas, distinct, were some fine blooms of Grace Darling, Madame Willermoz, Madame de Jacquier, Jules Finger, Maréchal Niel,

and Reine Marie Henriette, exhibited by Mr. Pack and awarded the first prize.

The baskets of Roses, as well as the baskets of miscellaneous flowers, are always a strong feature in the Isle of Wight exhibitions, and in this instance were no exception to the rule. They are usually of a large size, measuring 2 feet or more in length, and about 1 foot to 1 foot 6 inches across, the cross handle being decorated with flowers and foliage according to taste. The first prize for a basket of cut Roses was awarded to Mr. H. Strickland, Shanklin, for a good basket well arranged and of splendid quality. The second went to Mr. J. Atrill, gardener to E. Ratcliffe, Esq., Ryde; and Mr. J. Coffin, gardener to Sir Henry Daley, was highly commended for a basket showing much taste in the arrangement. For a bouquet of Roses, Messrs. W. & G. Drover was well to the front with a beautiful basket of Teas and Moss Rose buds. For a box of Roses Mr. J. Atrill was first with a large box of blooms; Mr. Darebury second. Messrs. Ewing & Co. and Mr. Brooks also exhibited well.

Miscellaneous.—For a basket of cut blooms Mr. Atrill had a very beautiful arrangement, containing Water Lilies, Roses, Gloxinias, Pelargoniums, &c., and was awarded first; Mr. J. Woods, Ryde, second; Mr. J. H. Sharland, Newport, h.c. For a hand bouquet, Messrs. W. & G. Drover was awarded first for a choice arrangement of Gardenias and Stephanotis, Mr. J. Atrill, second; and for six buttonhole bouquets Mr. J. Atrill was a good first, with Messrs. W. & G. Drover second. Boxes of cut Pelargoniums, Zonals and show varieties, Pyrethrums, single and double, in their several classes were well represented, and made a fine display of colour, a noticeable feature being a fine collection of cut herbaceous flowers, containing some very fine Pæonies from Messrs. W. & G. Drover, which gained the first in that class. The table decorations and other cut flowers exhibited by the ladies in their various classes showed much taste in arrangement, Miss M. Shaw, Mrs. E. F. Brook, and Mrs. Jones being the most successful. Two very fine dishes of Strawberries (James Veitch) from the open air were exhibited by Sir Henry Daley's gardener, and in the several interesting collections and baskets of wild flowers, was some very fine examples of the Butterfly, Bee, and Fly Orchises.

REIGATE.—June 30th.

The late Mr. Mechi of "magic strop" and Tiptree fame once enunciated the formula,

> "A dry May, and a dripping June,
> Does surely bring all things in tune."

His maxim will be tested this year. May here, in mid-Surrey, had but four wet days, while June is ending with sixteen and a rainfall of all but 4 inches; at Brockham Vicarage 3·91 inches, at Reigate 4·93 inches. The hapless hay mourns, but the Rose plants rejoice, and the blooms that can struggle out on sunny moments are excellent. High authorities foretell a good though late Rose season. The Show of Roses at Reigate on June 30th was of a nature to confirm this anticipation. The Roses had a cool morning for travelling and a bright breezy afternoon in which to be admired. The Show was small, and many blooms showed marks of weather.

The awards were as follows:—For thirty-six varieties.—First, Mrs. Waterlow; second, Mr. T. B. Haywood. Twelve triplets.—First, Mrs. Waterlow. Only one box shown. Eighteen Teas.—First, Mrs. Waterlow. Again only one box. Twenty-four varieties.—First, Mr. A. Slaughter; second, Mr. R. West; third, Mr. E. M. Bethune. Six triplets.—First, Mr. R. E. West; second, Mr. F. C. Paule; third, Mr. A. Slaughter. Twelve Teas.—First, Mr. A. Slaughter; second, Mr. E. M. Bethune; third, Miss Baker. Twelve varieties.—First, Mr. E. Wilkins; second, Rev. Alan Cheales; third, Mr. C. E. Cuthell. Four triplets.—First, Mr. E. Wilkins; second, Rev. Alan Cheales; third, Mr. E. Horne. Six varieties. First, Mr. E. Wilkins; second, Mr. E. Mawley; third, Mr. Freshfield. The Committee have failed to protect this last small class against those who show in twelve, a mistake they will do well to remedy.

Mr. Haywood showed a fine Mrs. J. Laing, a Rose of Bennett's, which is growing in favour. Mr. Slaughter's Général Jacqueminot was remarkable. Mrs. Waterlow showed Pride of Reigate, fine, and in all its pride of place. The Show would have been a small affair but for the kind assistance of the trade. Mr. G. Paul came to judge, and brought a box of Roses; one very pretty carmine Rose, not yet named, seedling, also Lady Alice, his white sport from Lady Mary Fitzwilliam, and Luciole, a new Tea of great beauty. Mr. Rumsey had a box of high-class Roses; Mr. Bunyard the same, and also a most interesting collection of twenty varieties of garden Roses. It has been strongly pressed upon the Brockham and Reigate Committees that they should have a class in future shows. Messrs. Cheal & Sons exhibited some beautiful cut flowers; but the great feature of the day was a lovely set of seven boxes of Teas brought by Mr. Prince of Oxford, in one case Madame Cusin and Maréchal Niel being shown together most effectively. His new pure white sport (H. S. Prince) from Souvenir d'un Ami shown side by side with the parent Rose excited great admiration. It is very like Niphetos, but larger and more robust, and likely when in commerce to be in great demand.

The Judges were Messrs. G. Paul, Rumsey, Prince, Brown, Ridout, and Rev. A. Cheales. The President of the Association and Mrs. Hayward entertained the Committee, Judges, and other friends with the splendid hospitality for which Reigate Presidents have always been famous. It cannot be doubted that these social gatherings tend to develope and perpetuate the friendly feeling and generous rivalry amongst competitors which is almost invariably conspicuous on these occasions. A basket of blooms from a new Scotch stock of seedling Briars, exhibited by Mr. Wollaston, also excited attention, giving promise of an excellent stock of the future. This is likely to be on show again at the N.R.S. Crystal Palace Show. The wild Rose now, wedded to our high-born Teas, receives an attention, which the Wizard of the North seems to have anticipated, but to deprecate—

> "Cherish the Tulip, prune the Vine,
> But freely let the Woodbine climb
> And leave untrimmed the Eglantine."—(*Marmion.*)

—A. C.

Another correspondent also favours us with the following note on the above Show:—"Previous to the Show day the Secretary and Committee must have had a most anxious time, by reason of the general backwardness of the season and the unpropitious state of the weather, the neighbourhood having suffered for several days recently from violent thunderstorms with heavy downpours of rain and hail, the latter in some places completely riddling the leaves of the Roses as though they had been pierced by bullets, while in the course of five hours, on the 26th ult., nearly 1¾ inch of rain was registered, this being frequently followed by heavy showers up to the morning of the Exhibition. No rosarian need be told what a disastrous effect this had on the Roses, more especially the Teas, and delicate petaled ones, such as Lady Mary Fitzwilliam; consequently the falling off in the leading classes was very noticeable, while the Great Doods Roses had it all their own way, being cut on the spot. Among the amateurs rough, coarse, and damaged flowers were in the ascendant, but the two best stands were in the class for twenty-four, distinct, shown by Mr. Slaughter, Steyning, and R. E. West, Esq., Reigate. These were remarkably fresh, clean, and very even, and only a few points divided them. Mr. West is showing well this season, having already staged, at different shows, eleven stands, and secured nine prizes. This is a great achievement for one with such a limited quantity of Rose trees. Mr. Prince sent a lovely and pure white sport from Souvenir d'un Ami, named Souvenir de H. S. Prince. It is a more pearly white than the old Niphetos, which some thought it closely resembled—though the distinction is great by reason of the petals being stout, solid, and erect. Unquestionably this is a Rose that will be much sought after, as in addition to its other good qualities, it has the robust and hardy constitution of the parent."

CROYDON.—July 4th.

A satisfactory Show was held in the grounds of Brickwood House, East Croydon, on Wednesday last, and it was the general opinion that both in number and quality there was a decided improvement on the previous exhibitions of this Society. Two large tents were occupied with the principal exhibits, comprising specimen plants and groups, with a good display of cut Roses, and some fruits.

A special feature in the Rose classes was the trophy, value twenty-five guineas, offered to gentlemen's gardeners and amateurs for thirty-six distinct Roses. The trophy is to be held by the winner for the year, and if won by the same exhibitor twice consecutively it will become his property. With it was also offered the National Rose Society's gold medal. It might have been expected that such inducements would have brought more than two competitors; but both these—namely, R. E. West, Esq., Reigate, and Alfred Slaughter, Esq., Jarvis Villa, Steyning, showed extremely well. So close were the competing stands that it was only after long and careful examination that the award could be made, and it was eventually given in favour of Mr. West. His blooms were larger than those of his opponent, but hardly, perhaps, so fresh and neat.

The varieties represented were as follows—Back row: Duke of Edinburgh, Pride of Waltham, Duke of Teck, Madame Gabriel Luizet, Charles Lefebvre, Général Jacqueminot, Madame Isaac Perrière, Dupuy Jamain, Duchesse de Morny, Madame Victor Verdier, La France, and Etienne Levet. Middle row; François Michelon, Dr. Andry, Comtesse d'Oxford, A. K. Williams (a splendid bloom), Heinrich Schultheis, Prince Arthur, Sénateur Vaisse, Horace Vernet, Mrs. Caroline Swailes, Countess of Rosebery, Xavier Olibo, and Earl of Pembroke. Front row: Duchess of Bedford, John Hopper, Prince Camille de Roban, Duke of Wellington, Fisher Holmes, Marie Finger, Duke of Connaught, Innocente Pirola, Louis Van Houtte, Baroness Rothschild, Marie Verdier, and Marie Baumann.

A special prize, consisting of a Rose trophy, value 7 guineas, and the National Rose Society's silver medal, was also offered for a collection of six Roses to be grown within a radius of four miles of the Croydon Town Hall. This naturally excited considerable interest amongst local growers. Six stands were in competition, the winning one being that of Ernest Wilkins, Esq., Lyndhurst, Sutton, who had good examples of Etienne Levet, Comtesse d'Oxford, Charles Lefebvre, Ulrich Brunner, Madame Gabriel Luizet, and A. K. Williams.

In the plant classes Mr. G. King, gardener to Phillip Crowley, Esq., Waddon House, was a successful competitor, and he carried off several leading prizes with specimens of moderate size, but distinguished by their clean healthy condition. Miscellaneous exhibits also contributed to the attraction of the Show, but the weather proved very unfavourable during the greater portion of the afternoon.

Notes & Gleanings

EVENTS OF THE WEEK.—As will be seen from the list on another page, the Rose Shows are still numerous, but the principal event will probably be the National Rose Society's Exhibition at the Crystal Palace on Saturday next, and one of the members of the Committee writes respecting it, "Should the weather prove at all favourable it will be the best Show we have held, at all events for many years." The Royal Horticultural Society's Committees will also meet on Tuesday the 10th inst., in the Drill Hall, James Street, Victoria Street, Westminster, the Twickenham and Ipswich Shows being fixed for the same days.

—— AT the next meeting of the ROYAL HORTICULTURAL SOCIETY on July 10th special exhibits are expected of Roses, Lilies, and Strawberries, and Messrs. Laing & Sons, Forest Hill, offer prizes for Begonias to amateurs and gardeners—viz., for six singles, distinct varieties, 40s., 30s., and 20s.; and for three doubles, distinct, varieties, 20s., 15s., and 10s.

—— OUR Entomologist writes:—"I see a correspondent inquires about the EGGS OF THE EARWIG. It would be no doubt an excellent plan to keep the pest under by destroying these, but unfortunately they are seldom to be found. What we might call the earwig season extends from July to October, when the insects are only too manifest. During their breeding time earlier in the year we have few opportunities of observing them, as parents and young live more or less concealed from view."

—— THE SHOW PELARGONIUM DUCHESS OF TECK as represented by a truss forwarded to us by Messrs. Fisher, Son & Sibray is a useful variety. Its characteristics are a bold truss, large handsome flowers; the petals substantial, crimped, and of snowy whiteness, and very large leaves. The stamens are bright reddish-purple, and present a distinct and pleasing contrast with the pure white of the petals surrounding them.

—— WE are informed that the annual Exhibition of the EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY takes place on Wednesday next, July 11th, in the grounds of the Royal India Asylum, Elm Grove, Ealing and the prizes will be distributed by the Duchess of Teck.

—— TO see OMPHALODES VERNA in perfection select a moist, shady position, where it will soon spread into large handsome patches and give abundance of its intense blue flowers annually in spring, sufficient to satisfy the most fastidious. In some parts of the country it carpets the ground, and in spring is a perfect picture. There is a white variety but it does not equal the type for general effectiveness.

—— PAPAVER ORIENTALE.—"Amongst the numerous varieties of Poppies," writes "E.," "not one is more showy at the present time in the borders than is orientale, its brilliant scarlet blossoms with a large black blotch near the base of each petal renders it extremely showy. It grows freely and increases fast, no difficulty need be experienced in obtaining a stock of this handsome border plant."

—— THE same correspondent remarks—"When growing singly on the grass QUINCES of good dimensions are very ornamental when in flower, as they have been this season, covered with their large white blossoms. Where spring-flowering trees are in favour many worse ones than ordinary Quinces could be planted."

—— THE numerous species and varieties of ŒNOTHERAS form a pleasing group of plants with yellow flowers for the most part, free and useful for borders. Œ. serotina, fruticosa, Youngi, and riparia have yellow flowers in great profusion, and grow about 2 feet high. Œ. macrocarpa also is yellow, but of procumbent habit. Œ. eximea and speciosa have large handsome white and fragrant flowers; the latter sometimes fades to rose and flowers in the wildest profusion. It attains nearly 2 feet high, and may be regarded as one of our best hardy plants either for the rockery, the border, or for bedding purposes.

—— FRUIT EXHIBITION AT VIENNA.—A Fruit Exhibition will be held by the Association of Austrian Pomologists, under the patronage of the Archduke Charles Louis, at Vienna, from the 29th of September until the 7th of October next. Two sections of this Exhibition are international—namely, that for fruit-drying apparatus and that for machinery and implements used in cultivating and harvesting fruits. Applications for space in the international sections should be directed before the 15th of July to the K.K.Oesterreichische, Pomologen Verein, Leschwald, Graz, Styria, Austria.

—— "HOW seldom do we see PERNETTYA MUCRONATA in private gardens?" writes "S."; "yet it never fails to flower abundantly at this time of the year; it will grow in almost any position, and even under the partial shade of trees it does fairly well. This Pernettya is well adapted for planting in a much exposed position where south-westerly or east winds are troublesome. We have it on the south-west side of a bed of Kalmias and Ghent Azaleas, which are much exposed otherwise to wind from that quarter. When planted in peat it grows fast, throwing up strong vigorous shoots from the base, and is easily increased by dividing the roots. Its pure white flowers are very showy produced as they are in such profusion; afterwards the berries, which are borne freely, render it again attractive. Being low-growing and dense also, it is much more valuable than any other shrubs."

—— AN interesting example of BUD-SPORTING IN PEACH TREES is brought to our notice by Mr. J. Willard, Holly Lodge Gardens, Highgate, who writes:—"The three Peaches sent are from the same tree (Violette Hâtive): The green one shows the stage of the crop; the other two are both from the same shoot, and have taken a lead throughout. The house has been treated for the growing crop as to moisture, &c. Under these conditions I should not expect much in the way of flavour. Their swelling and ripening so much earlier than the rest of the crop on the trees I thought remarkable, and shall be much obliged for an opinion in the Journal. The tree has shown a tendency to gum in places, beyond this I can see no causes." Two of the fruits are overripe, size 10½ inches in circumference, the other representing the crop quite hard and 6 inches in circumference. The ripe Peaches appear to differ from Violette Hâtive, and it seems desirable that endeavour should be made to "fix" the sport by budding.

—— THE GARDENERS' ORPHAN FUND.—At the monthly meeting of the Executive Committee on Friday night last the gratifying announcement was made that a sum of £330 had been received from seventy-four local secretaries, and that nearly £70 had been received during the preceding week from other sources. The total amount now received is £1800, of which £1000 is invested in Consols. Mr. C. H Sharman was elected an Auditor in the place of Mr. Fraser, who is unable to attend. Preparations were made for the election and first anniversary dinner on July 13th, and it was hoped that gardeners will, as far as possible, make it at the time for visiting London and joining in the gathering, which is expected to be representative and enjoyable. We hear many gardeners fancy those who have but one vote can vote only for one candidate, and we are desired to state that subscribers of 5s can give one vote each to any six candidates, or if they especially wish to have a particular candidate elected they can give one vote to that candidate only. But it must not be imagined the votes are cumulative, as in School Board elections, and that six votes can be given to any one candidate for a 5s. subscription.

—— A CORRESPONDENT writes:—"GRAPES ON WALLS have broken well, and bunches are plentiful. Well attended to there is a prospect of the crops ripening; if neglected, a failure must result. The shoots ought to be freely thinned, leaving one only to each spur, and in the case of young canes it is frequently advisable to thin the laterals, crowded growth preventing the ripening of both the crops and the young wood. Stop all fruiting or reserved shoots not required for furnishing blank space at either the first or second joint beyond the bunch, and before the bunches weigh them down tie in or otherwise fasten all to the walls or trellises. Where the old rods fail to bear fruit, lay in young canes either in short lengths or at the base. The former being trained along the old rods and stopped when about 18 inches long will become fairly stout and well ripened, and without any pruning will produce fruitful shoots next season, these to take the place of the old and useless spurs previously sawn off. If it is intended to wholly replace worn-out rods

with young ones, give the latter good room to develope, and stop when about 6 feet long. Leaders on young Vines also to be carefully fastened to the walls, and be duly stopped when they are 4 feet or more in length, or according to their vigour. Lateral growth from ripened wood to be kept stopped at the fourth or fifth joint, and from the young canes at the first joint."



THE OLDFIELD ORCHIDS.

THE first portion of the collection of Orchids formed by F. A. Philbrick, Esq., Q.C., at Oldfield, Bickley, was sold on June 26th and 27th at Messrs. Protheroe & Morris's Rooms, Cheapside, and as many rare and valuable plants were included, numbers of Orchid growers were attracted and some good prices were realised. Some of the most important plants sold were the following, with the prices attached :—Cypripedium villosum aureum, 10 guineas ; Cœlogyne cristata Lemoniana (Veitch) 12 guineas and 21 guineas ; Lælia lilacina, a natural hybrid between L. Perrini and Cattleya crispa, a plant with twelve pseudo-bulbs, 21 guineas ; Cypripedium Veitchi, fine plant with eight flowers, £23 2s. ; fine plant and good variety of Cattleya Trianæ, 15 guineas ; Cattleya Trianæ Backhouscana, 13 guineas ; Cattleya Mossiæ grandidissima, 16 guineas ; Cattleya Trianæ Clio with fifteen pseudo-bulbs and two growths, large flower, £24 3s. ; Phalænopsis Stuartiana nobilis (true), 12 guineas ; Cœlogyne cristata alba with fifteen pseudo-bulbs and seventeen breaks, 18 guineas ; Lælia elegans Turneri with fourteen pseudo-bulbs and two breaks, £27 6s. ; Cypripedium politum, a fine plant of this hybrid with four breaks, 11 guineas ; Lælia anceps Dawsoni, a strong plant, part of the original figured in the "Orchid Album," vol. i., £31 10s. ; Lælia anceps Schrœderi, a fine plant, 17 guineas ; Cattleya Mendeli Wallacei, a grand plant with twelve pseudo-bulbs and two breaks, £23 2s. ; Cattleya Mendeli hybrid with six pseudo-bulbs, 11 guineas ; Cattleya Skinneri alba with eight pseudo-bulbs, 15 guineas ; Phalænopsis Schilleriana, 10 guineas ; Cypripedium cardinale, two leads and two growths, 12 guineas ; Cypripedium insigne Chantini, a fine plant, 10 guineas.

VANDA BATEMANNI.

THIS strong-growing and somewhat rare Vanda is not very frequently met with, only in gardens where Orchids are extensively cultivated, the reason probably being that it is not sufficiently free blooming to merit a place in smaller collections. There is a strong plant which is now producing its vigorous flower spike in the gardens of J. Denham, Esq., Sneyd Park, Bristol, the blooming of which is exciting some little attention, as it forms one among very few, if not the only specimen in the neighbourhood. It is growing in a pot some 14 inches in diameter, and if I remember rightly, it has fourteen pairs of its stiff, broad, pale green leaves on the principal growth. It has two other small leads, a third having been removed for the purpose of increasing the stock. The plant has been growing for some time at the shady end of a large span-roofed stove, a position that has evidently suited it well. The flower spike promises to be of a good length, and will continue the display over a long period, the buds being disposed at rather wide intervals along the stem, this being at the time of my visit about 2 feet in length. The first bud, although not nearly open, was just assuming its richly coloured tints, while the point suggests the possibility of many more flowers to follow for a long time hence. Mr. Rye, the gardener, has had this plant for several years under his charge, but this is the first flower-spike formed since its importation.—W. S.

THE DOWNSIDE ORCHIDS.

MANY regrets were expressed when it became known a few weeks ago that the estate of William Lee, Esq., Downside, Leatherhead, was to be shortly sold and the magnificent collection of Orchids dispersed, for numbers of Orchid lovers have had the satisfaction of inspecting the well-grown plants included in the extensive ranges of glass houses. The sale of the first portion of the collection is fixed for July 10th, 11th, 12th, and 13th, at Downside, and no doubt it will constitute one of the most interesting gatherings of the kind yet held. For the four days 1280 lots are enumerated, comprising many valuable hybrids, and rare, or in some cases unique, plants. The collection is especially rich in Cattleyas. Those who have seen the large span-roofed house filled with specimens in flower will not readily forget the spectacle. Cypripediums also comprise scores of choice plants, Dendrobiums and all the larger genera being proportionately represented. The situation, houses, and treatment have evidently suited the plants exactly, for they are in vigorous health, a recommendation which Orchid purchasers readily appreciate. The sale will commence each day at 12.30 P.M.

ROYAL HORTICULTURAL SOCIETY.

JUNE 26TH.

SCIENTIFIC COMMITTEE.—R. McLachlan, Esq., F.R.S., in the chair Present : Messrs. Boulger, O'Brien, Church, Murray, D. Morris, Dr. Masters, and Mr. Ridley.

Mr. Ridley reported that the Odontoglossum referred to him for a name at the previous meeting was a form of O. oblongatum.

Aluminium in the Ashes of Plants.—Professor Church contributed a summary of his highly interesting and important researches upon the presence of aluminium in the ashes of plants. This substance, instead of being peculiar to the species of Lycopodium, as once supposed, is found in minute traces in the ashes of very many others, a circumstance not to be wondered at, considering the abundant distribution of the element in many soils. It occurs in all the species of Lycopodium examined, except those which are of epiphytic habit, and which, consequently, do not directly derive their food from the soil. It does not occur in the allied genus Selaginella. It occurs in the ashes of some Tree Ferns in large proportions, sometimes forming as much as 20 per cent. of the ash, as in Alsophila australis, Cyathea medullaris, while from others it is all but absent. In the British species of Ferns little or no alumina has been found.

Weevil Attacking Rhododendrons.—Mr. McLachlan exhibited specimens of a beetle destructive to Rhododendrons at Sunningdale, and which he identified as Strophisomus limbatus.

Beetle Injurious to Tobacco.—Mr. McLachlan showed specimens sent from Trinidad of beetles injurious to Tobacco and Egg Plants in that island, and which he found to be a species of Epitrix, allied to that which feeds on Atropa belladonna in this country.

The Plague of Caterpillars.—Mr. McLachlan called attention to the notion that cold winters are injurious to insects—a notion he stated to be erroneous ; although, no doubt, severe alternations of cold, heat, drought, or moisture were prejudicial to insect life. During the present season it was noticed generally that great destruction of foliage occurred from caterpillars which destroyed the succulent portions of the leaf and tied the framework and fragments together by a web of fine threads comparable with spiders' webs. These caterpillars were different in different cases. In the Oak they were species of Tortrix ; in the Apple the winter moth was destructive ; while in other cases the larva of the Ermine moth was exceedingly hurtful to leaves.

Heteroicous Fungi.—Mr. Plowright contributed specimens illustrative of the following notes :—

Æcidium on Pea and on the Bean.—This was produced on both plants by infecting them with the same infecting material—viz., Uromyces fabæ. The Æcidium on the Pea differs in appearance from that on the Bean, the pseudoperidia in the former being few and scattered over pale yellowish spots, while on the Bean they are crowded in thickened white spots.

Puccinia extensicola.—This produces a very handsome Æcidium on Aster tripolium. Mr. Plowright found the Puccinia last year at Wells-next-the-Sea, Norfolk, and produced the Æcidium this year on the leaf now exhibited.

Gymnosporangium confusum (Plowright).—This species has hitherto been confounded with G. fuscum. It occurs on Savins, but does not produce Æcidia on the Pear as G. fuscum does, but on the Hawthorn, Quince, and Medlar, specimens of which were exhibited. Professor Sorauer of Proskau had sent leaves of Hawthorn on which he had produced the æcidiospores of G. confusum from teleutospores sent by Mr. Plowright about a month ago. The æcidiospores of G. clavariæforme were also sent for comparison. All the specimens sent were the products of cultivation. A special vote of thanks was proposed by Mr. Murray for this and other contributions of Mr. Plowright.

Spiral Torsion in Mint.—Dr. Hogg exhibited a specimen of Mint in which the stem was so twisted that all the leaves were placed in one continuous line. The phyllotaxis, as pointed out by Mr. Henslow, is really not interfered with in these cases. The occurrence is not uncommon. [See Masters' "Vegetable Teratology," German edition, 1886, page 367.]

Opuntia Shoots.—Mr. Morris exhibited joints of Opuntia monacanthus and O. Dillenii, which bore seeds in their interior, shoots from their upper edge, and roots from their lower end. [Analogous cases were observed as long ago as 1832, and various references to similar phenomena are given in Masters' "Vegetable Teratology," German edition, 1886, page 207.]

Various Exhibits.—From the Royal Botanic Garden, Edinburgh, came catkins and cones of Pinus contorta and other species of Coniferæ. A malformed flower of Odontoglossum crispum from Mr. Douglas was referred to Mr. Ridley. Brassia caudata and Acanthophippium striatum were also shown.

CÆSALPINIA JAPONICA.

THE relatives of the Cæsalpinias form a very distinct division of the great family of Leguminous plants, and are mostly distinguished by the comparative regularity of the flowers and the partial or entire absence of the Papilionaceous or pea-flowered characters so strongly marked in many other genera. Few Cæsalpinias are cultivated for their decorative value, and the majority are either tropical trees or shrubs, interesting botanically or useful to some extent in their native lands, but seldom seen here except in botanic gardens. C. japonica, however, possesses more important claims to attention, as it would no doubt be found hardy in many parts of southern England, and Messrs. J. Veitch and Sons have tried it satisfactorily in their Coombe Wood nursery. Specimens in flower shown at a recent meeting of the Royal Horticultural Society showed the characteristics of this plant to the best ad-



FIG. 2.—CÆSALPINIA JAPONICA.

vantage, and a first-class certificate was at once granted for it. The leaves are pinnate with small even bright green pinnæ, and the bright yellow flowers, not unlike some of the Cassias, are borne in graceful erect racemes, the individual flowers being on long slender stalks. It is of good habit and free both in growth and flowering.

EARLY RHUBARB.

I CAN but regret that, having sent you a sample of Rhubarb, which during a series of years I have proved to possess certain new characteristics in that vegetable, you should remark that my "experience is inadequate for determining whether the kind, with such characteristics, is or is not new." Having for some years made the plant a study, all I can say is that had there been known a Rhubarb which—wholly unforced by oak leaves, pots, tubs, or other contrivances — begins to bear usually by St. Valentine's Day, if not earlier, I think I should have heard of it. I am sure you would not consider me capable of designedly misleading other persons. Must I then conclude that you would advise me to reflect whether I am not myself misled in supposing that plant to be mine which I myself for years have ventured to cultivate carefully — one whose characteristic qualities have been advertised in no nurseryman's list—simply because nurserymen grow no plant with such properties, and, like honest persons, have never professed to have such on sale? I do profess to have Rhubarb such as is described in my prospectus, and such possibly as some relative of mine (though I cannot be sure of it) raised from seed, which has certainly been grown in my family for forty years, and which as certainly I have specially cultivated from ten to fifteen years in my garden. I consider it my own by inheritance as well as by a long course of culture given it. And, therefore, as in a free country like England, a man may do what he will with his own, I, without prejudicing my neighbours' plants, have called my plant the "Yaxley Vicar's Rhubarb." And I hope I have not unpardonably offended the usages of horticulturists, whom I very highly esteem, by standing sponsor to my own Rhubarb.

Allow me to observe that it is not correct to say that I am "selling roots of the variety." No copy of my prospectus has at present been issued without the "prices" having first been cancelled by the words written over them "Advanced proof," a term well understood among journalists. In that paper I was careful to say that I referred to the St. Martin's Rhubarb only, because it is admitted by gardeners to be "amongst" the earlier kinds. I cannot help being fully aware that there is a difference between St. Martin's Rhubarb and mine, when I have grown the two kinds for comparison side by side and seen the difference yearly for ten years.

I accept your thanks for the half-dozen stalks with leaves I sent you; only, however, after a special request made in your columns. They are from the fag-end of the crop, and have been, and must indeed remain, the very last I pull this year. I cannot, therefore, accept your advice to send a sample at this time of the year to any committee, however well qualified, of any Society however distinguished. What grower of sound judgment would think of exhibiting a vegetable of the earliest spring now after Midsummer Day? Only one thing — the peculiar form of the growing plant—can be seen now (and not much later) better than at any other time of the year. There are about one dozen well-established stocks to be seen. As, therefore, I have no secrets to conceal, I repeat my offer that, by appointment, without giving any away, I shall be happy to show it to you, or to any person you please to commission to come and inspect it, describe it, sketch it, or photograph it.

From none of the statements made in my prospectus do I withdraw one letter; willingly undertaking to justify every word, if, please God, I live till next spring. I hope you will print what I have here written. —W. H. SEWELL.

[We readily print this letter. It is precisely because we felt our correspondent incapable of designedly misleading that we presumed he would regret doing so inadvertently, and we suggested a course that would prevent the possibility. The Vicar declines to submit a sample of his Rhubarb now that its character is developed and its "peculiar form seen" to "any committee, however well qualified, or any society, however distinguished," for ascertaining whether it is really distinct from existing varieties or not; and asks, "What grower of sound judgment would think of exhibiting a vegetable of the earliest spring now after midsummer?" We do not know any grower who would hesitate to do so in the case of Rhubarb, and samples similar to the variety in question have been exhibited this year, at the time when their "peculiar form could be seen;" and we are bound to observe that although the time is considered unseasonable for submitting the Rhubarb in question for examination by competent authority, we are still invited "to inspect it, describe it, sketch it, or photograph it." If it is the wrong time for showing it we do not clearly see that it is the right time for figuring it; but perhaps the Vicar can reconcile his declinature on the one hand and his readiness on the other.

It is our duty to say, honest personal conviction on the part of an owner of something believed by him to be new, distinct, and superior from anything of the same nature in cultivation is not sufficient to entitle him to attach to it a new name and sell it as a new variety, unless his conviction is founded on a much more enlarged experience than is revealed in this case. The variety in question appears to have been tested with the St. Martin's alone, and because it differs from that, which we know by comparison, and because it is earlier, which we admit, the owner of it thinks that in this "free country" he is free to give a forty-year-old Rhubarb a new name, and send it out as a new variety. The fancy prices in the prospectus we are told are cancelled. Whether the variety was raised from seed or not, we repeat that the comparison with one variety alone, and that a second early, is obviously inadequate for determining whether the old favourite is new and earlier than all other varieties in cultivation or not. If after a full comparison it is certified as differing from them all, then its sale under a new name, and at any obtainable price, will be justifiable; but if it should happen to be identical with an existing variety largely grown, there can be no such justification. The negative evidence cited about nurserymen's lists is of no avail. Evidence of distinctness must be positive, and founded on trial with earlier varieties than the St. Martin's for public satisfaction.

As a sample of the Rhubarb under notice cannot be sent for examination by a well qualified committee at the present time because the merits of the variety can only be determined in spring, may we make another suggestion—namely, that a root be sent in the autumn to the Royal Horticultural Society's experimental garden at Chiswick, on the understanding that roots of the same size and character from the collection there be taken up and planted with it? If this is done, and the new comer is found to be distinctly in advance of them in hardiness, earliness, and sweetness, proving all that is claimed for it in the prospectus, its fame will be spread all over the country, and the value of the stock enormously enhanced.]

ARTIFICIAL MANURES.

AFTER perusing Mr. Dunkin's recent contribution to the above subject I felt considerably disappointed on finding a decided tendency on his part to perform a rapid flank movement in regard to the scientific application of artificial food to plants as evinced by his sturdy opposition to the use of "properly proportioned combinations." Why he should be so anxious to creep back under the safe shadow of his experience is evident. I was at one stage of this controversy flattering myself that our respective views would eventually converge to the "true system," but he apparently intends to make a stand on the present position, and I will endeavour to briefly recapitulate a few of the various modes, practices, or systems that have been elicited during this debate.

In the first instance we have a simple application of a specific artificial manure, but its repeated application does not prove satisfactory, so recourse is had to what I termed the "haphazard system," that is, by some other kind of manure. This course being challenged, the second or "semi-artificial system" was advocated, this taking its name from the faulty artificial being supplemented by natural liquid and solid manures. Passing from this point and calling up the names of successful cultivators to endeavour to bolster up his cause, we arrive at the "fad system, or anything for a change system," and from this is evolved "the experiential system," that is, anything for a change provided results are satisfactory. But a spasmodic study of chemistry shows that a greater certainty of effect can be produced by a knowledge of the nature of the elements administered and induced a move to the aim of all true scientists—viz., "the true system." To this system I had at one time great hopes of converting my adversary, but he has apparently found some of the chemical compounds "altogether too mysterious."

Against this formidable array of "systems" consecutively championed by your correspondent, I have but one—viz., "the properly proportioned combination of the elements needed system," which I brought forward, in the first instance, against the initial article, and to which I also alluded in conclusion in a recent article, yet your correspondent has failed, he says, to find a single instance in which I have taken into consideration the various stages of growth that plants pass through, and the condition they are in at the time of application, and also that he considers I have shifted my ground considerably.

That the "experience" system is a tolerably safe resort to the unscientific cultivator there is no disputing, as it cannot be maintained that a system known to give good results, even though it is a blind and clumsy one, is altogether objectional. Not that I intend this to add to Mr. Dunkin's jubilant attitude when he says he is glad to notice that I am gradually abandoning the ideas of the "properly proportioned combination of elements needed system" as unnecessary and impracticable, as it is my intention to stick to this text until he can prove more clearly than heretofore that we shall never reach that stage where we can take for our motto "Scientia docet." After pointing out a few of the positions taken up by Mr. Dunkin at various times, I do not think he will place all the inconsistency to my credit.

As your correspondent again alludes to the use of lime, I would remind him that he has not yet cleared up the point in reference to its action on soils in regard to the idea of its causing moisture to be retained in land that it has been applied to with the object of renovating its fertility. Possibly it may have been an oversight in the same way that I failed to bring forward further arguments anent market plants. While agreeing with much advanced regarding the altered conditions under which they are placed being an important factor in their degeneracy, there are still other points that should not be overlooked in dealing with the subject. For instance, those plants retained by the market grower to grow on receive special treatment by not being called on to carry their crop of flowers so long as the others. Erica hyemalis and its companions would

be cut down long before its flowers commenced to fade, and Azaleas would be stripped of their buds even before they had time to expand. Again, taking a scientific view of the case, and presuming that they had been fed continually on nitrate of soda or some other equally strong ammoniacal stimulant, their vigorous growth would, according to scientific teachings, have absorbed the bulk of the phosphoric and potassic constituents from the limited portion of soil at command of the plant; hence the usual dose of nitrate or other similar substance would fail to have any effect, so that here we have an explanation of the circumstance, "that when one kind of manure is continued for several weeks the plants receiving it do not respond to its stimulating influences so readily as when it was first given. When such is the case give a few applications of clear water, and then supply some other kind of manure, and health and vigour will follow." It was to this vague and unscientific advice given in an article of his on "Artificial Manures for Pot Plants," that Mr. Dunkin will please to recollect that I took exception, though since then the debate has expanded, and other points have been raised that make it desirable to drop the latter part of the heading. The questions at issue are substantially the same, and may, I think, be summed up as follows:-Firstly, Is a change of food for plants necessary? Secondly, Is it possible to produce a perfect plant food? Thirdly, Will experience triumph over science? The first question, I think, my arguments are clearly against, provided the second can be answered in the affirmative, and the third I should answer by advising that the "p. p. c. system" be given a trial.-M. COOMBE, *Ashton Court, Bristol.*

RICHMOND.

RICHMOND is in many respects the most favoured of the larger towns surrounding the metropolis, which may be now almost described as part of the suburbs, so rapidly have the lines of houses extended. The valley of the Thames offers many attractions from Kew onwards, and the exceptional beauty of the view from Richmond Terrace is widely famed. From the Terrace Gardens also delightful prospects are obtained, and the townspeople may well value such an important acquisition. But it is the great park which more than anything else gives Richmond its pre-eminence, and were this its only attraction it would be a favourite resort for visitors, and one that should be preserved with the utmost care. A walk on a bright summer's morning from the gate near the "Star and Garter Hotel," across to the Robin Hood Gate near Wimbledon Common and thence to the Sheen Gate, gives an adequate idea of the charming wildness and sylvan beauty of Richmond Park, at present unmarred by anything of an incongruous character. In taking the route named and avoiding the roads, the Pen ponds are passed, and then on the rising ground to the left is seen the pleasantly situated residence of the Duke and Duchess of Teck, to which a few notes may be devoted.

WHITE LODGE GARDENS.

The pleasure grounds surrounding the mansion are of an unpretentious character, their chief attractions being the well-kept lawns, vigorous shrubberies of old tree-like Rhododendrons, shaded walks, and borders of homely flowers such as one delights to find in country gardens. Especial favourites are East Lothian Stocks, and some beds of a capital strain of these have been yielding abundance of massive spikes of large double bright red and pure white flowers The seed is generally sown in the beginning of August, the seedlings being kept in pits or cold frames during the winter, and placed out in spring, when they soon make fine plants, and the following season are bushy specimens of considerable size and very useful. Irises, too, are favourites in the borders with Carnations, while Roses occupy a number of beds, miscellaneous hardy plants of the most reliable habit and showy character filling all other border space. Amongst the shrubs very conspicuous is the Mock Orange or Syringa (Philadelphus coronarius) and its varieties. These must have been planted freely some years ago, for the bushes are of great size, and during the closing weeks of June they filled the air with the powerful fragrance of their numberless flowers. Besides these, Lilac, with red and white Hawthorns, make up the greater part of the shrubberies with the Rhododendrons already mentioned. Several Conifers seem thoroughly at home, but the finest specimen amongst the trees is a wonderfully large spreading example of the Copper Beech, which covers with its branches a space something like 100 feet in diameter. Seen on a sunny day when approaching from the Pen Ponds, this Beech has a remarkably fine appearance in contrast with the various green tints of the trees in the background.

The kitchen garden is about a mile from White Lodge, near Sheen Gate, and there the gardener, Mr. J. S. Lindsay, gives good evidence of his practical knowledge and skill. The garden occupies a space of 3 or 4 acres, rather narrow, and of great length, running east and west, the only advantage of this form being that it gives a fine extent of wall space. The principal wall is on the north side, which is 525 yards long, the south aspect being occupied mainly with Peaches, Nectarines, Plums, Cherries, and Apricots, the majority well-developed healthy fruitful trees, but some trouble is experienced with the last named. Peaches constitute an important crop, and with the exception of two or three trees are bearing well, having in this respect much the advantage of those in many gardens, that were severely damaged when in flower this spring. The favourite varieties are the following—Hale's Early, chiefly relied upon for early supplies under glass; Early Rivers and Early Albert, which has fine-looking fruits with white flesh, but is liable to come with split stones; Early Silver, one of the Sawbridgeworth seedlings, and Dr. Hogg from the same source, are both found to be good varieties; Bellegarde and Lady Palmerston coming in well for mid-season and later supplies. Only one tree of Royal George is grown, as it is found to be especially subject to mildew, and this season it is the only one so affected. The Nectarines are Lord Napier, Prince of Wales, and Pine Apple, the first being valued for its appearance, and the two latter for their flavour.

Of Apricots Hemskerk is the least liable to canker, and is hardier than Moorpark, though the latter is superior in quality, but Plums are so much more satisfactory that they are gradually superseding the Apricots. Varieties of the Gage type have been planted freely and look well. Particularly noticeable also is Rivers' Early Favourite, a fine oval purple Plum of good flavour, extremely prolific, and on a warm wall like the one under notice is evidently very early. Transparent Gage, Guthrie's Late Gage, and Pond's Seedling promise equally fine crops. Cherries are a favourite fruit at White Lodge, and large supplies are obtained from a number of healthy trees occupying the wall at the lower portion of the garden, and the crops this season look extremely satisfactory. An early variety in much request is the Early Purple Gean, which in favourable seasons is ripe at the beginning of June. Dr. Hogg says in the "Fruit Manual" that "this variety was received by the London Horticultural Society from M. Decandolle of Geneva in 1822; and by M. Decandolle it was procured from M. Baumann of Bolwyller." The fruit is large, becoming when fully ripe of a purplish black colour; the flesh is also dark, juicy, with a rich flavour, and excellent for dessert. The tree is of good habit and very free, but is said to require the Mahaleb stock to ensure its success. Another fine early variety is Empress Eugénie, which is one of the May Duke type, but considerably earlier, the fruits large and juicy. Black Eagle is also a reliable highly approved variety.

Cross walls at intervals have both east and west aspects filled with Pear and Morello Cherry trees, the former in many varieties, but all carefully selected for special qualities. One warm corner is occupied with a White Marseilles Fig, which ripens its fruit, and a large space in the lower garden is occupied with Filberts and Cobs, that serve for shelter. The kitchen garden quarters are closely cropped, and Peas are coming in freely. The early supplies are derived from three varieties—namely, Sangster's No. 1, Ringleader, and William I., which were all sown at the same time—viz., December 1st, and a good succession is thus secured. Sangster's No. 1 has been yielding good pods for over a fortnight, and the other two follow naturally in the order named. This practice is followed every season, but it is usual to sow a week earlier. Amongst Potatoes Mr. Lindsay commends Snowdrop as an early variety, being both prolific and of good quality; in frames the tubers come particularly fine, clean, and good. Several pits and frames are devoted to early Potatoes, Cucumbers, Melons, and Tomatoes, and that they are utilised to the best advantage may be judged when it is stated that one from which successive crops of Asparagus and Potatoes have been cleared is now occupied with Melons. A three-quarter span Peach house has some handsome trees on front and back trellises. Hale's Early, Early Albert, Dr. Hogg, Bellegarde, Stirling Castle, and Barrington being the varieties. There is also a small vinery and Cucumber pit, the former containing good Black Hamburghs colouring well, and the latter contains fine bunches of Muscat of Alexandria, grown on Vines in an extremely limited space both as regards their roots and stems. Mr, Lindsay is one of those quiet determined characters who does not readily give way to difficulties, but rather takes a pleasure in overcoming them, and this is amply shown in the Grapes as well as other products.

Two other objects require special mention—namely, the wall coping and Tropæolum speciosum. For several of the cross walls a copings formed of feather-edge boards is employed, which is readily secured by means of nuts and screws, and as readily removed. Early in the season this is convenient for suspending protective material when the trees are in flower, or preserving the fruit, but when these coverings are no longer required the copings are removed and the trees receive the full benefit of all the rain that falls. They are easily and cheaply constructed, durable, and thoroughly efficient. Tropæolum speciosum is usually found difficult to grow in the south, but in the White Lodge kitchen garden it is flourishing almost as well as it is seen in Scotland. It was planted six years ago in prepared soil, stiff clay being plentifully used, and it has remained ever since, the growth now trailing over a trellis and amongst the Gooseberry bushes more like a weed than a plant of delicate habit or difficult culture. When covered with brilliant flowers, as it is every season, it furnishes quite a blaze of colour.

From the Duke of Teck's garden to the Exhibition of the Richmond Horticultural Society, of which he is President, is perhaps an appropriate transition, and so a few informal notes upon what ranks as one of the best shows around London are here given.

THE RICHMOND SHOW.

The fourteenth Show of the Richmond Horticultural Society was held on Wednesday, the 4th inst., in the Old Deer Park, the display of plants, flowers, fruits, and vegetables being highly satisfactory throughout. The district is an important one horticulturally, and the local rivalry, not only between amateurs and gardeners in Richmond, but between those and the Twickenham exhibitors, has assisted materially in the development of the Show. In any case one of the strong points is the uniform merit of the exhibits in all the classes, and this is the best indication of the good work the Society is performing. With the

aid of a strong Committee, an able energetic Chairman, T. Skewes Cox, Esq. ; a well known Vice-Chairman, Mr. G. Nicholson ; and a courteous Secretary, Mr. J. H. Ford, with his attentive assistant, Mr. E. F. Gribble, the Richmond Society has amply maintained its reputation.

The weather was most unfavourable, frequent showers occurring during the day, but though this undoubtedly had a deterrent effect upon intending visitors, the exhibitors entered in their usual numbers, the competition being very keen in some classes. Three large marquees were filled with exhibits ; one was devoted to cut flowers, bouquets, and stands of flowers, another to specimen plants and groups, and a third to fruit, vegetables and cottagers' productions, the quality throughout being most commendable. It is impossible in the present issue to give a full list of the prizewinners and exhibitors, but a few of the principal may be noted. In the cut flower tent the Roses were well represented, Messrs. Turner, Paul & Son, and Rumsey being the most successful of the trade competitors, while in the amateurs' classes, R. E. West, Esq., and J. P. Kitchen, Esq., took the lead. Numerous tasteful stands and baskets of flowers were shown, Messrs. Barr & Son and Mr. T. S. Ware having extensive groups of hardy flowers not in competition. The second large tent comprised the specimen plants from Mr. Bates and Mr. Munro, the latter showing Ferns well ; Orchids from H. Little, Esq. ; Pelargoniums from Mr. Turner ; a capital group of plants, first in its class, from Mr. Wm. Brown, and collections of plants from Messrs. Veitch & Sons, B. S. Williams, C. Lee & Sons, and others, for some of which medals were awarded. The fruit and vegetable exhibits were excellent, Messrs. Osman, Bates, Feist, and Munro winning the chief prizes in the former classes, but several of these, together with the vegetables, merit a few farther notes next week.—L. CASTLE.

A PLAGUE OF CATERPILLARS.

DURING the last three weeks we have been visited here by these pests, which have attacked the young growths of the Oak, Ash, and Hazel in the woods. About a third of the trees are completely stripped of every green leaf, making them seem when looking at them from a distance as if they had not yet burst into leaf. Sweet Chestnut and Birch trees are not apparently touched.

In the garden they have attacked and entirely stripped the Apple trees, also Pears, but Cherries and Plums have escaped with only a few leaves eaten. Gooseberries and Currants entirely escaped. A few days after they first appeared numbers of rooks were busily searching through the woods for them, and nearer, and in the gardens, the starlings and house sparrows were busy going from tree to tree in search of them. Never having seen so much damage done by them before, I should be glad to hear from correspondents if they have appeared in other places, and what damage they have done. Here they have been very local, as in gardens a few miles distant scarcely any have been noticed.—T. GRANT, *The Gardens, Ossemsley Manor, Christchurch.*



HARDY FRUIT GARDEN.

EARLY STRAWBERRIES.—In order to secure a long succession of fruit it is advisable to plant in different positions, some being grown in the warmest part of the garden, still more in a fairly early open position, and others in cooler situations. Where there are good borders to the south and south-western walls a portion of these might well be annually given up to Strawberries. If a good breadth of ground cannot be spared the next best plan is to form a row of plants at the front parallel to and about 15 inches clear of the path. Quite young plants are always the earliest, and produce much the finest fruits. For these reasons plants on sunny borders ought to be cleared off every season as soon as the crops of fruit and runners are taken. These strong early plants also produce a number of strong early runners, or enough for both border and pot culture, and altogether are very profitable. If the ground just cleared of early Potatoes was well manured for that crop all that is necessary is to clear off all rubbish, level and trample the surface prior to following with early Strawberries. Very rich loose ground encourages too much leaf growth, but a little manure should be added to poor ground.

SUITABLE VARIETIES AND CULTURAL NOTES.—The good old Keens' Seedling is still one of the best for warm borders, and certainly preferable to Vicomtesse Hericart de Thury, this usually growing too vigorously, and producing too many small fruits. A trial may also be given to Laxton's King of the Earlies and Noble, both being very distinct, and on some soils very superior. Sir J. Paxton, though a little later than those just named, is yet one of the most profitable early varieties that can be grown, and ought always to be largely planted. This season, owing to the long spell of showery weather, it will be possible, in many districts at any rate, to lift plenty of well-rooted runners, these being already well established in the mulch and soil between the rows. Plants thus lifted with a good ball of soil and roots and replanted take most quickly to their fresh quarters ; but if they cannot be obtained in this way the runners ought to be layered in small pots as soon as the crops are gathered and kept supplied with water. When well rooted they may be detached from the old plants and at once planted out. In planting see that the soil is not dry, and all ought to have the soil firmly rammed about the roots. The rows of Sir J. Paxton, Vicomtesse Hericart de Thury, and Noble ought to be not less than 2 feet apart, a similar distance separating the plants in the row. Less vigorous growers may be put out rather more thickly in the rows. All should be mulched with strawy manure, and if need be watered occasionally, and from such treatment profitable plants will result.

RASPBERRIES.—There is every prospect of a good crop of fruit being obtained from these, the rains have fallen opportunely. All fruiting canes should be kept well secured to the stakes or wires, and where the young suckers are at all crowded thin them out freely, this naturally favouring those reserved for fruiting next season, as well as admitting more light and air to the crops now maturing. If not already done heavily mulch the ground with strawy manure, and birds must be kept away with the aid of fish-nets fixed well above the rows of plants. Where suckers are formed in the open spaces between the rows these may be lifted with a small ball of soil about the roots and planted on good ground.

FRUIT FORCING.

PINES.—*Suckers from Early-fruited Plants.*—Plants started early in the year for fruiting will now in the case of early sorts have ripened their fruits, and the later varieties will be so advanced as to admit of their being removed to a vinery or other house rather cool and dry, which will prolong the season and admit of the successional plants being afforded more room and light to induce a sturdy habit. Let there be no delay in obtaining the suckers from the early rooted plants, potting them in fibrous loam rammed firmly into the pots and around the base of the suckers, watering at once, having in readiness a bed of fermenting materials at a temperature of about 90° at the base of the pots to plunge them in. They root best in a close moist pit. In plunging bring the material over the surface of the pots so as to prevent the soil becoming dry near the top, the soil will then have sufficient moisture until the suckers have rooted, they doing so more quickly if shaded from bright sun and ventilated a little at 85°. Care must be taken not to subject the suckers to strong bottom heat. Beds that had a supply of fresh material in spring will not require any now. They may, however, with advantage be turned to a depth of 20 to 24 inches, but those that had not a renewal of the material in spring should have an addition of about a foot of new tan mixed with the old to a depth of 18 inches, avoiding if possible the making of new beds, but if it be necessary 24 inches in depth of new tan will afford all the heat necessary for the suckers.

MELONS.—*Late Plants.*—It is important that the late plants be placed out at once, especially where the means of affording artificial heat is confined to fermenting materials. Whether grown in pits or frames a sufficiency of fermenting materials should be used to raise a bottom heat of about 90° to start the plants quickly.

In Houses.—When the crops are cleared, the plants, if exhausted, should be removed, and preparations made for a fresh start at the earliest opportunity, but if the plants are in good health it is sheer folly to root them out, as they will come into bearing again much sooner than young plants, and are in every way more tractable ; indeed, if the plants are not overcropped, do not suffer from insufficient water at the roots, and the foliage is kept healthful, they will continue bearing as late as is desired. When the crop is cut the plants should be divested of most of the old or damaged leaves, fresh growths being encouraged in the place of any exhausted, which should be cut away. Loosen the surface of the bed, removing some of the soil, and apply a couple of inches of fresh loam, giving a good watering. When growth is taking place afford an application of liquid manure, and then treat as for former crops. When Melons are grown upon the continuous system it is well to note that the laterals will grow somewhat freely and show fruit abundantly after a few joints of growth. The flowers after being impregnated will set and the fruit swell freely, so that sufficient moisture only need be accorded to maintain the plants in continuous bearing. Attend to stopping, thinning, tying, or otherwise regulating the growths, not allowing pressure of work in other departments to interfere with this, or the results will be so detrimental as to be difficult to remedy.

PEACHES AND NECTARINES.—*Early Houses.*—The very early houses will be cleared of fruits, and should be treated as advised in our last calendar under this head. Those, however, who do not commence forcing until the new year, and have nothing earlier than Hale's Early, Royal George, Grosse Mignonne in Peaches, and Elruge in Nectarines, will not this year have been able to gather ripe fruits before the second or third week in June, unless the trees have been subjected to more artificial heat than considering the adverse season is good for them. If very early fruit is wanted, varieties that afford it under circumstances that are fatal to its production by others subject to the same treatment should be chosen. For very early fruiting Alexander and Waterloo are valuable. They are of good size, and have plenty of colour. They are clingstones, yet have good flavour, but it is no use expecting to find in the very early Peaches the same quality as obtains in such kinds as Hale's Early, Early Alfred, Early York, Dr. Hogg, &c., which are first-rate in every respect, and are succeeded by the standard sorts, such as Royal George (Stirling Castle is a very fine form of this best of all Peaches for forcing taken all round), Grosse Mignonne, Bellegarde, Noblesse, and Barrington, which are unsurpassed by any. Of the very

early Nectarines there is Advance, but it is well worth waiting another fortnight or three weeks for Lord Napier, which is a capital sort, indeed it is best of the early Nectarines, and leads up to Elruge, Violette Hâtive, Pine Apple, and Victoria. These are mentioned not in disparagement of others, but as thoroughly reliable and unsurpassed in quality. When such are grown they must not be forced to ripen with the very early varieties, or the fruit will not finish satisfactorily; in fact, to have good fruit—the finest—the trees require time to accomplish good work. Trees started early in January will not, to do them justice, ripen their fruit before early June. This year the fruit is ripening a fortnight to three weeks later than usual, Hale's Early not being ripe before the close of June, and Royal George until early July. Now, the point is this, Forced against weather the fruit would have ripened three weeks earlier at a great sacrifice of size and quality of fruit. These are matters worth the attention of those expecting produce of the finest quality. When the fruit commences ripening water should be withheld from the foliage and fruit, a gentle warmth being maintained in the pipes to ensure a circulation of air constantly, and to prevent the deposition of moisture on the fruit through the night. Air should be freely admitted, and if the weather be very hot and the panes of glass large, a double thickness of herring nets, or a single thickness of pilchard nets, drawn over the roof lights will break the rays of the sun, prevent the undue heating of the fruit, and insure its gradual ripening, instead of being dead ripe at the apex whilst the lower part is quite hard. The tender skinned varieties, such as Noblesse, are liable when exposed to powerful sun, especially after a dull period, to have the fruit browned at the apex, and in some instances cracked, which spoils otherwise noble fruits. A little air moisture, secured by sprinkling available surfaces occasionally, will be of great service to the foliage, and will not do any harm provided the atmosphere is not close.

STRAWBERRIES IN POTS.—We are still gathering from plants under glass fine fruits of over an ounce weight of Sir Joseph Paxton, President, Dr. Hogg, and Sir Chas. Napier, and shall continue for another fortnight or three weeks. The outside ones are in, but they being of the early sorts make a poor display at table as compared with those above, and what is worse the quality of the outdoor earlies is very indifferent as compared with the late forced sorts. As soon as runners can be had they should be layered in small pots. We use 3-inch, into which lumpy rather strong loam has been rammed, adding a quart of bonemeal and a similar quantity of soot to every bushel of loam. The loam being turfy, manure is not added, but when otherwise we use a fifth of fresh horse droppings. A row of pots is half plunged between every two rows of plants in the open, which leaves a space between alternate rows for operating in layering, watering, &c. Strong runners are laid in the pots, one in the centre of each, a slight indent being made, and each secured with a peg made of galvanised wire, No. 12, cut in lengths of 2½ inches and doubled. With proper attention to watering the runners root quickly, and when the roots show at the bottom of the pots, and before they are rooted through into the soil, they are detached, stood under a north wall for a few days, and then potted. Runners are only taken from young vigorous plants, and such as have shown fruits; indeed, the best plants to get runners from are those that were planted last year as strong runners, being reservations of the forcing ones for the particular purpose. We still recommend the varieties La Grosse Sucrée and Vicomtesse Hericart de Thury for early, Sir Joseph Paxton and President for general work, and Sir Charles Napier and Dr. Hogg for late. Besides, we still have some Keens' or Sir Harry, James Veitch, &c., and Noble.

PLANT HOUSES.

Bouvardias.—Plants raised from cuttings of young wood or portions of root should now be bushy and sturdy, ready for planting out or placing in their largest pots. If the first is practised, select a sunny spot where the base is firm or can be made so. The compost in which they are to be planted should be 5 or 6 inches deep, and may consist of ordinary garden soil, to which has been added one-seventh of decayed manure and a liberal portion of leaf soil. If the flowers only are needed in a cut state, the plants may be allowed to grow without pinching, strong shoots will issue from the base, and surprisingly large plants will be produced by September. When required for this purpose alone, they can be lifted with good roots and placed without repotting them on the bed of the house in which they are to flower. When required for decoration in pots planting out is not advised. Place them into 5 and 6-inch pots according to their size, and strong shoots that issue from the base must be pinched if an even head of bloom is desired. Carefully harden the plants before placing them outside.

Grevillea robusta.—Plants raised early from seed may be placed into 5-inch pots in a mixture of loam, sand, and one-seventh of manure. Press the soil firmly into the pots, and grow the plants as cool as possible so that they will be dwarf and sturdy. Plants grown to a decorative size under cool conditions in the latter stages last double the length of time that would be the case if drawn up quickly but weakly in heat. Smaller plants in pans or 2-inch pots may be transferred into 4-inch pots. Seed may still be sown, and small but useful plants can be produced by winter, or will be found invaluable during the spring months.

Dracæna rutilans.—Plants that have attained too large a size may be reduced by taking off good well furnished heads. These should be cut off where the wood is moderately soft. Place the heads in 4-inch pots with a little sand in the centre for the base of the stem to rest upon. If plunged in the propagating frame, and shaded from the sun, or even in a close moist structure, they will quickly form roots and be ready for decoration again in a short time. Young stock raised in heat early in the season will be ready for 5-inch pots. If the plants are not needed for some months grow them from the present time under cool conditions; by such treatment they make the sturdiest and most handsome plants. Under cool treatment they take fully double the time they need when pushed forward in heat. Young plants raised now by placing the root portion of the stem in heat will make capital plants for placing early in the year in 5 and 6-inch pots. These, after they are once established in small pots, may be grown and wintered cool provided they are not needed before the spring.

Adiantum cuneatum.—For yielding a good supply of fronds during the winter those plants that have been heavily picked up to the present time should be thoroughly cleaned by the removal of all small fronds. Give them a few weeks' rest in a moderately cool place and then push them into growth. Be careful not to grow the plants under too much shade, for fronds produced under such conditions will not stand after they are cut. A fair amount of light is essential, with air admitted liberally when the fronds are developing. This treatment will produce light green fronds that are more suitable for association with choice flowers than those of a dark green appearance. Plants that have their pots full of roots may be fed with weak stimulants to assist them in pushing up strong fronds. Pot seedlings, as well as any young plants that need more room at their roots. Plants well established in 60's will, if placed into 5-inch pots, yield a quantity of small but useful fronds during the winter. In potting, use a light open compost, loam and leaf mould in equal proportions, with sand and a little lime rubbish added. Leaf mould is preferable to peat.

THE BEE-KEEPER.

HOPES FOR THE HARVEST.

THE almost entire destruction of the Alsike Clover has jeopardised the bee-keeper's harvest. The cold winter and protracted severity of the spring, preceded by a drought of exceptional severity, killed the root with a result which can only be approximately estimated. Walking over some 700 acres of seeds a few days ago we noticed scarcely a single head of the sweetly delicate flower upon which the bee-keeper depends so much for his annual profit. If, however, the weather is propitious during the next ten days a considerable surplus may yet be obtained from the Dutch or White Clover of the pastures, which seems to flourish in unusual abundance, notwithstanding the exceptional heat of the past few days.

In some districts fruit blossom has yielded an average quantity of honey, but on the whole the result of the season has, so far, been a decided disappointment. Swarms also are few and far between, and many bees have lost their lives in the heavy storms of the past few weeks. But—and so much depends upon this—given a fine July, and there is every hope of an average harvest, provided that the instructions repeatedly given in these columns have been followed out, and all stocks are consequently now strong and ready to work in supers. Those stocks which have already worked out the frames of foundation given to them will increase in weight very quickly, unless the torrid heat of to-day, the 28th of June, continues and dries up the pastures, thus destroying our only hope, unless we have access to the moors, where the purple Heather will in August give another chance of retrieving past disaster. Now that the prevention-of-swarming system seems to have been very generally adopted there is always a greater certainty of obtaining a surplus, because every stock is always strong and ready to work in supers at the earliest opportunity, and consequently precious days are not thrown away in building up swarms which ought either to have been prevented from issuing, or at least built up either by strengthening or other means, ready for the time when the great annual harvest is expected to be gathered.

At the present time we must impress upon bee-keepers that their hope of a harvest depends upon their ability to restrain the swarming impulse. If all the bees of a stock are kept together instead of being divided between the swarm and the stock there is more than a hope for a tolerably successful season, but if a division is now made or allowed to take place there is hardly any possibility

of either swarm or stock being in a position to take advantage of the Clover harvest, although both may be prepared to work in August on the Heather. Unity is strength. Unity is profit. Day by day a strong stock or built-up swarm collects and stores a great weight of honey, provided the weather is favourable, but a weak stock or newly hived swarm must perforce look after present wants and leave the future to chance.

A few days ago we saw a bee-keeper who was in great distress because his bees would not swarm. He had supered them, and they were working in the supers, but he was under the impression that "prosperous bees always swarmed." He had read and learned a little knowledge. His little knowledge was somewhat dangerous; but he is happy now on receiving an assurance that he was on the highway to success and might hope to obtain better results from his undivided stocks than he had ever before obtained from his prosperous bees which always swarmed. At the present time the heat of a hive to which proper attention is not paid must be appalling, and we entreat every bee-keeper to see that proper precautions are taken to keep the blazing sun from baking the hives and melting down the new built combs, and thus destroying the stocks. This point must be at once attended to. Before we again put pen to paper our hopes will have been realised or blasted. If we have a good harvest may it be the precursor of many other equally favourable seasons; but if the weather fails us, and the harvest so eagerly expected from the Clover is not stored, then may we express the hope that another year a better season may be in store to keep awake our enthusiasm and to fan into a blaze the lukewarm interest of those who are ever ready to decry an industry if success is not a constant and faithful attendant on anything which they may deign to take up either for amusement or profit. In the course of a week or two instructions for the care of stocks after the season has ended shall be given, and we have no doubt that those who have their own interests really at heart will be the first to see that at the close of one season due and proper preparation is made for the following year.—FELIX.

[Since the above was written we hope rain has revived the pastures referred to. Sufficient has fallen near London for the present, and for some days the weather has been the reverse of favourable for bees.]

TRADE CATALOGUES RECEIVED.

Michael Rains & Co., 34, Mansell Street, City, London.—*Wholesale Catalogue of Dutch Flower Roots and Bulbs.*

Messrs. Deane & Co., 46A, King William Street, London Bridge.—*Illustrated Catalogue of Glass Structures, Summer Houses, Heating Appliances, &c.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Gardeners' Orphan Fund (*A. Wilson*).—Mr. Barron will be communicated with on the subject of your letter.

Synonymes (*G. T.*).—"Syn" is an abbreviation of synonym, which, used in connection with plants, means that all those grouped under it are the same—the same variety with different names.

Grapes not Setting (*J. M.*).—It is the result of imperfect fertilisation, the consequence either of a deficiency of pollen, or its insufficient dispersion through a too damp and close atmosphere. Cut out the small and leave the larger berries when thinning.

Seedling Pancratium (*G. H.*).—As nearly as we can judge from one rather damaged flower, your plant is nearly related to, if not identical with, Pancratium carribæum.

Tuberous Begonias (*W. M. McRobbie*).—The flowers sent are very fine indeed, and the foliage accompanying them shows conclusively that the plants have been excellently grown. They are a credit to you, and you might do service to others by describing your method of culture in the Journal.

Roses for Buttonholes (*A Young Subscriber*).—You could not do better than grow Rubens, President, Madame Falcot, Grace Darling, and Perle de Lyon; if you want a red one you will find W. F. Bennett, Hybrid Tea, useful. For flowering early Safrano and Isabella Sprunt will produce more buds than most others. The buds are thin and rather small, which with some may be an objection. In our Rose column will shortly appear under "Roses in Winter" a paper on the management of Tea varieties in pots, and in it, we think, you will find all the information you may require.

Roots on Vine Stems (*T. T.*).—These are incited by a close moist atmosphere, and when they are present under contrary conditions they indicate that the roots in the border are not supplying the wants of the Vines. Mr. Barron, in his book, says, "If the true roots are in a perfectly congenial condition, no air or adventitious roots will be produced in any ordinarily well managed vinery." They will probably do no harm to the Vine, and we should not remove them, but let them wither naturally. Are you sure the Vine is not being cropped too heavily? If it does not push sub-laterals freely that is the case.

Insects on Strawberries (*S. N.*).—Your plants are suffering from an attack of one of the snake centipedes (Geophilus longicornis). The specimens sent are about half the adult size. These insects have been remarkably troublesome in many gardens during the last three or four years. When it is discovered that Strawberries and similar plants are infested by them it is a good plan to dress in spring with quicklime, soot, and wood ashes mixed in equal proportions, applying this evenly over the whole of the soil, or gas lime may be worked in at the rate of half a peck per rod, combined with an equal quantity of dry earth. Quantities may be killed by baiting them with slices of Potato or Apple wrapped in a little hay and placed in the ground.

Caterpillars on Rose (*J. C. M.*).—The specimens sent are those of the small emerald moth, Iodis lactearia. It is not usual to find this species on Roses, the chief food being Whitethorn or Blackthorn in hedgerows, but it is liable to occur on other plants of that tribe, yet seldom numerous enough on any to do serious harm. There appear to be usually two annual broods. An emergence of moths takes place in May, these being parents of the June caterpillars, and, being of a delicate green tint, they are often unobserved amongst the fresh foliage. Hence they escape capture, as do also the caterpillars, from their mimicry of inanimate objects, by stretching themselves out rigidly, as do others of the Looper group. But it is likely insect-eating birds detect them by their pink markings on the light-green general colour of the body.

Temperature for Tomatoes (*Subscriber*)—The plants grow freely, and their fruit ripens well in a night temperature ranging from a few degrees below to a few above 60°, with a free circulation of air. No injury is done if the temperature falls to 55°, or even a few degrees lower now and then, but the ripening is retarded. The day temperature may be about 65° by fire heat alone, rising to 85° or even 90° with sun and a free circulation of air. A close damp atmosphere must be avoided, and while the house should not be quite closed at night more air must be admitted very early in the morning. So long as ventilation is managed judiciously, and the plants are otherwise properly attended to, a few degrees more or less by night or day are of no practical consequence, and the plants cannot have too much sun.

Pear Failing (*Ebor*).—We advise your examining the roots in autumn as you suggest; but from the abundance of bloom and the fruit not standing, we have doubts if the roots of the tree have enough moisture. Such appearances are often produced from extreme dryness and extreme moisture, but the latter can hardly be the case with such a bed of sand beneath. All you can do is to keep the roots near the surface so as to encourage the making of short-jointed wood, and mulch or cover the ground with tiles to keep it moist as well as warm. Are you sure that enough moisture is given? Such cracking is produced by various causes, such as a high dry temperature and a deficiency of moisture at the roots, and then again by plenty of moisture at the roots, considerable warmth, and a dry cold atmosphere. In the one case the fruit swells too fast for the root-action, and in the other it does not swell fast enough.

Tomatoes and Strawberries (*F. W.*).—No doubt muriate of potash is good for Tomatoes, but we have this to say, that if a person cannot grow them well without it, its absence is not a sufficient reason for the failure. Some of the finest crops that have ever been produced have been grown without muriate of potash. No one kind of manure can be named as absolutely the best for all soils, and all the fertilisers advertised are found serviceable by cultivators, some finding one the best and some another, according to the nature of the soil to which they are applied. As you evidently do not require a large quantity, you cannot do better than procure a small tin of each, and you will then be able to find which suits your soil the best. Finely ground bone meal and superphosphate of lime are good for Tomatoes in most soils. By the time this appears in print you will find whether the Strawberries will

swell or not after injury by the hail storm. You did right in applying light dressings of nitrate of soda for inducing a quick growth of new leaves, but had better not continue its use much longer.

Pink and Blue Hydrangeas (*T. C.*).—You ask if liquid manure of any kind given to Hydrangeas will cause the flowers to have a deep pink tinge, and add that, "alum will cause it, hut it injures the plants." As alum is given to cause the flowers to become hlue, and as they are usually more or less pink, perhaps you inadvertently used the word pink instead of hlue. The plants are injured by alum when it is used in excess. On the subject of blue Hydrangeas a correspondent, who has had them in ahundance, wrote some time ago :—"Iron rust is an excellent agent for changing the pink flowers of the Hydrangea to a deep blue. In a valley here there is a vast ochreous deposit arising from the action of the air upon mineral springs. Some thousands of cartloads of the soil through which this water has percolated for a long course of years has been used for fruit stations and flower borders. All the Hydrangeas (about fifty in number) that have been planted in it have grown freely, and are annually laden with a profusion of flowers of a deep rich hlue colour. This fact is as important as it is interesting, affording a hint of such value as to place blue-flowered Hydrangeas within the means of everyone. Here is my explanation. Ochre in its pure state is simply a combination of iron rust and water, technically termed a hydrated peroxide of iron or ferric acid. If, therefore, common ochre be mixed with the soil in which Hydrangeas are planted the flowers will come hlue, and the depth of colour will he pretty much in proportion to the quantity of ochre used as well as its condition. It is well to remember this, because the ochre of commerce is often much adulterated with substances which are only to be detected by a chemical test." Sulphate of ammonia at the strength of from a quarter to half an ounce to a gallon of water given to the roots twice or thrice a week deepens the colour of Hydrangeas.

House for Forcing Rhubarb (*Young Gardener*).—A lean-to facing east would answer very well. As you only require it for affording a daily supply, we presume for a private establishment, a house 6 feet 6 inches wide inside would answer, and the height at the back need not be more than 7 feet 6 inches. This will allow of a bed in front 4 feet wide, hut 4½ inches of the width would he required for a wall, which should be taken up 18 inches above the ground level, and have a wooden coping 4½ inches by 2½ inches. The front wall need not be more than 4 feet 6 inches high ahove the ground level. A flow and return 3-inch pipe will be sufficient; indeed you will require valves to regulate the heat where the pipes enter the house, and the flow may be fixed along the front a few inches above the surface of the hed, and the return in the pathway, either next the bed or against the wall. If the ground allow of the pathway heing sunk to the depth of the bed, it would be an advantage as regards the height of the front wall. The best soil we have used for packing around the stools of Rhubarb for forcing is leaf mould. A temperature of 55° is necessary to have the finest stalks, but in forcing against time the temperature may he 65°. About a dozen stools of three-year-old plants must he introduced at intervals of a fortnight or three weeks, according to the demand, to maintain a daily supply, from three weeks to a month being needed from the introduction of the plants to gathering. As two or three rows of stools can be put in the bed the house would need to he ahout 18 feet long. It is usual to have a wider house in which to force Mushrooms and Seakale, as well as Rhubarb; and, whilst you are about it, it may not he undesirahle to give the subject consideration, a larger structure heing relatively cheaper, as it certainly is more useful than the smaller. We maintain a daily supply of Mushrooms, Seakale, and Rhuharb in the forcing season from a house 13 feet long and 11 feet wide, having beds on the floor on hoth sides 18 inches deep hy 3 feet 6 inches wide, including the walls, for Rhubarb and Seakale forcing, and two heds on each side above them for Mushrooms, there heing 18 inches space between the heds. The house is a lean-to with a north aspect. If you were to give a more precise account of your requirements we might be ahle to furnish a more definite reply.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the hest packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Unknown*).—The plant is Pitcairnia punicea, also known as Pepinia punicea, and is occasionally grown in gardens as P. Jacksoni. It is very handsome when grown like the specimen sent. (*Batile*).—A dark variety of Cypripedium harbatum. (*S.*).—The Lilium is L. testaceum; the Odontoglossum is a small variety of the O. luteo-purpureum type. (*M. C.*).—Cattleya Reineckiana, undoubtedly. (*G.*).—Probably Rodriguezia crispa.

COVENT GARDEN MARKET.—July 4th.

Business remains the same with large supplies to hand. Prices generally easier. Outdoor Strawberries in full supply.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	0	0	to 0	0	
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	1	6		3	6
Lemons, case	10	0		15	0
Oranges, per 100	4	0	to 9	0	
Peaches, dozen	6	0		12	0
Pears, dozen	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb.	0	6		1	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	2	0	to 3	0	
Asparagus, bundle	0	0		0	0
Beans, Kidney, per lb.	0	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	0	0		0	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	0	0		0	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to 1	3	
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
New Potatoes, per cwt.	8	0		14	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		8	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	6		0	10
Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to 4	0	
Arum Lilies, 12 blooms	2	0		4	0
Asters, French, per bunch	2	0		3	0
Azalea, 12 sprays	0	0		0	0
Bouvardias, bunch	0	6		1	0
Calceolaria, 12 bunches	4	0		6	0
Camellias, 12 blooms	0	0		0	0
Carnations, 12 blooms	1	0		3	0
,, 12 bunches	4	0		8	0
Cornflower, 12 bunches	1	6		3	0
Daisies, 12 bunches	2	0		4	0
Delphinium, 12 bunches	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0
Eucharis, dozen	3	0		6	0
Gardenias, 12 blooms	1	6		4	0
Iris, 12 bunches	6	0		9	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium candidum, French, per bunch	1	0		3	0
,, English 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	2	0		4	0
Marguerites, 12 bunches	2	0	to 6	0	
Mignonette, 12 bunches	3	0		6	0
Pansies, 12 bchs	1	0		4	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	4		0	6
Pinks, various, 12 bunches	2	0		6	0
Polyanthus, 12 bchs	0	0		0	0
Pyrethrum, doz. bunches	3	0		6	0
Roses, Red, 12 blooms	1	6		2	0
,, (outdoor), 12 bchs	4	0		12	0
,, (indoor), dozen	0	6		1	6
,, Tea, dozen	1	0		2	6
,, yellow	2	0		4	0
,, (Moss), 12 bunches	6	0		12	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	1	6		3	0
Stocks, 12 bunches	1	6		4	0
Sweet Peas, dozen	3	0		6	0
Sweet Sultan, 12 bunches	6	0		8	0
Tropæolum, 12 bunches	1	0		2	0
Tuberoses, 12 blooms	0	6		1	0
White Gladiolus, 12 sprays	0	9		1	6
White Lilac, per bunch	0	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to 12	0	
Arbor vitæ (golden) dozen	12	0		24	0
Bedding out plants in variety, per dozen	1	0		2	0
Calceolaria, per dozen	4	0		9	0
Cineraria, dozen	0	0		0	0
Coleus, dozen	3	0		6	0
Crassula, dozen	18	0		30	0
Deutzia, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
,, ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen pots	4	0	to 12	0	
Genista, per dozen	0	0		0	0
Heliotrope, dozen pots	4	0		8	0
Ivy Geranium	3	0		6	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	0	0		0	0
Lilium Harrisii, doz. pots	18	0		30	0
Lobelia, per dozen	4	0		6	0
Marguerite Daisy, dozen	6	0		12	0
Mignonette, per dozen	4	0		8	0
Musk, dozen pots	2	0		4	0
Myrtles, dozen	6	0		12	0
Nasturtiums, per dozen	3	0		6	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		18	0
,, scarlet, doz.	3	0		6	0
Spirea japonica, doz.	6	0		12	0
Stocks, per dozen	3	0		6	0



MANURES FOR PASTURES.

THE DYSON'S WOOD EXPERIMENTS.

The end and aim of these experiments is to ascertain which manure, or mixture of manures, answers best for the promotion of a full development of all the Clovers and Grasses sown upon new pastures or found established in old ones, and not to induce rampant growth of a few at the expense of the remainder. That such important knowledge is surely, if slowly, being evolved, was clearly evident when our inspection was made on June 21st—slowly, because results are materially affected by weather, and this being so, experience has shown that greater certainty attends the result of hay crops than those of the aftermath, which is so frequently spoilt by the drought of summer. Repeatedly have we told our readers, as an unmistakeable result of our own experience, that the application of chemical manures not later than the end of February tends to promote such strong free growth as insures a full crop of hay. Sown then, the nitrogenous manure is quite certain to be dissolved and all of the manure washed down to the roots, and it is found that the growth of pasture so nourished is so little affected by cold spring weather that it is always comparatively

forward and robust. Imperfect, or rather unsatisfactory results have, in some instances, followed the application of manures in April at Dyson's Wood, and we hope Mr. Martin J. Sutton may be induced to try the effects of an earlier application.

Whether nitrogen is applied in the form of nitrate of soda or sulphate of ammonia, we would use it early, in combination with well-balanced proportions of muriate of potash, steamed bone flour, and mineral superphosphate. Experience has shown that nitrogenous and mineral manures should be well mixed, and the mixture be used by the end of February. There need be no fear of a loss of nitrogen, for the roots of a well-knit pasture permeate the soil so closely as to prevent this, and above all things we require an early robust growth if we would have a full crop of hay.

Upon the old pasture at Dyson's Wood the plot dressed last year with farmyard manure at the rate of 10 tons per acre has decidedly the best crop this year, and the advocates of muck were jubilant at this triumph, as we think we heard it termed. But was it not a hollow victory of muck over chemical manures? This matter after all resolves itself into a question of profit and loss, and we proved for our own guidance long ago that the advantage is very much on the side of the chemical manures. The cost of a ton of muck is very seldom ascertained with any approach to accuracy. Here the price given is 6s. per ton, but we question if that amount shows its real cost. In the last number of the Journal of the Royal Agricultural Society of England we have a series of elaborate calculations of the cost of fattening bullocks, and the cost of the manure per ton at Sir J. B. Lawes' experiments at Woburn, which go to prove that the average cost of manure obtained in this way actually amounts to £1 9s. 8d. per ton! "Dung," the writer very justly observes, "is merely what is added to the straw. If one waters one ton of straw, and does nothing else but let it lie about for a time, something like 4 tons of mere wet straw-dung may be obtained. The manurial value of a ton of straw is estimated at about 10s., therefore four tons of merely wetted straw is only worth 2s. 6d. a ton as dung. On the other hand, if a ton of straw be used as litter for twenty weeks for a fattening bullock receiving about 17 lbs. per day of cake, besides Clover, hay, and roots, the original ton of straw has most costly additions made to it." No doubt the muck used at Dyson's Wood had been manufactured as carefully as possible, but the ordinary process of making it in open yards and heaps is most extravagant, for by the time the muck is applied to the land its most essential properties have vanished in the air in the form of gas set free by fermentation. It is all very well to talk of the kindly influence of humus; the sentiment sounds —well, like a drum, for depend upon it there is very little in it. We had to take a large quantity of muck in valuation at a farm which fell in last Michaelmas. The muck has been used side by side with chemical manure, and the comparative value of the two can be seen at a glance, the dark green hue and vigorous growth of the crop treated with chemical manure affording a remarkable contrast to the weakly growth and pallid hue of that under muck, which in this instance contains little besides humus, as it had been the custom of the farmer from whom it was purchased to trample down all his Wheat straw in the yards with horses and a few store bullocks.

If the experiments tend to show which are the best manures to be used for pasture they will do good service as affording a basis upon which farmers may make calculations. But in turning the results to practical account due weight must be given to local peculiarities of soil and climate, and, too, the residue of manure left in the soil in autumn may only be available for next year's crop, according to the weather which prevails during winter. In the comparatively dry weather of recent winters the soil has not been washed as it is in a wet winter when, as Sir J. B. Lawes tells us, so much nitrogen passes away with the drainage water.

WORK ON THE HOME FARM.

As we write this note the weather continues unsettled, and showers of rain have been so frequent that roots, corn, and green crops have all derived much benefit from them. In several instances we have seen Mangolds with about a three-quarter plant from early growth, where the rain has caused the remainder of the seed to germinate, and although the plant from this is late it has been left to fill up vacant spaces, but the roots will not be so large as those which grew earlier.

Mowing grass for hay has been kept somewhat in abeyance while the weather continued so unsettled, but the time has now come for this work to be done. Our remarks have in this matter somewhat of a local bearing, as we are aware that hay-making has been in hand for the past week or two in the south midland counties. If the weather continues unsettled due care must be taken to avoid having the hay much "washed" in the making. This is managed by putting in cocks as soon as it is about half harvested, then by the exercise of watchfulness it may be shaken out as opportunities occur in rows, and be kept moved by passing the tedding machine along each row, again putting it in cocks if the weather is doubtful. Extra precaution should be taken in a wet summer to prevent overheating in the hayricks. We manage this perfectly in a very primitive manner by making one or more air shafts in each rick to admit of a free escape of vapour by stuffing a sack with straw, building up the hay around it, and gradually drawing it to the top of the rick as the work goes on. Each evening before the men leave the work the stuffed sack is withdrawn from the shaft so as to allow the hot vapour to escape freely during the night. If hay can be made it is altogether preferable to any other food for cows and cattle, but if not, then it is well to have recourse to making silage, which can be done as easily in damp unsettled weather as in fine, provided the necessary amount of pressure can be applied to stack or pit. For farms generally it may prove to answer best to make a certain quantity of both hay and silage, because hay can always be sold if there is a surplus quantity on hand, and the silage be turned to account for home consumption. Where a pit silo is provided there is no doubt that chaffed silage of Maize, Sorghum, or other coarse herbage, affords an invaluable supply of nourishing food for winter use.

DR. VOELCKER ON MANURES.—At Dyson's Wood, on the occasion of inspecting the experiments above referred to, Dr. Voelcker, in reply to several speakers, said there were many problems yet to be worked out—one being the value of earlier application of certain manures as suggested by Mr. Wright. Mr. Sutton's experiments had been very useful to him personally. From his general experience he should certainly prefer a dressing of dissolved bones to one of steamed or boiled bones; and where it could be had farmyard manure was of the utmost advantage to grass lands, but it was not necessarily always the best, owing to variations in soils. To put the whole thing in a nutshell, he should advise chemical manures for cereal and root crops, and farmyard manure where it could be obtained for permanent grass crops, if the manure were properly made under cover. For temporary pastures, and these alone, he should advise the use of such things as nitrate of soda, but it must be used with due caution. Farmyard manure was especially valuable in giving staple to a soil, and to put nitrate of soda on a poor soil was not fair. They should use chemical manures for what they took out, when they had other necessary ingredients in the land already, and not to enrich or impoverish the soil. The most economical application of farmyard manure was certainly to land which was deficient in humus, or worked badly mechanically. If they once got the soil into organic condition they might use chemical manures for corn and root crops, and also on grass to a limited extent.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1888. June.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 24	30.003	58.9	57.1	E.	57.1	77.9	52.2	114.9	51.2	—
Monday..... 25	30.004	75.6	68.5	N.	53.4	84.7	59.2	125.5	55.4	0.040
Tuesday .. . 26	29.847	64.5	63.2	N.E.	60.3	75.8	61.3	104.2	57.0	0.601
Wednesday.. 27	29.736	63.4	59.6	S.E.	60.2	68.4	57.6	101.2	54.8	0.302
Thursday.... 28	29.823	59.9	54.9	S.	59.5	67.9	54.9	113.3	53.2	0.045
Friday 29	29.570	61.1	54.8	W.	58.7	68.1	52.9	118.1	47.1	0.051
Saturday 30	29.860	55.7	51.2	N.	58.5	64.8	49.8	110.7	44.2	—
	29.785	62.7	58.5		59.0	72.5	55.4	112.6	52.7	1.037

REMARKS.

24th.—Heavy rain in the small hours;* damp and very oppressive morning; fine and hot afternoon

25th.—Fine and very hot, but frequently cloudy.

26th.—Cloudy early; wet from 8 A.M. till nearly noon; high yellow fog for a short time at noon, after which it cleared, and there was some sunshine in the afternoon; thunder and lightning all the evening and night with heavy storms of rain

27th.—Cloudy morning, wet afternoon and night.

28th.—Fine and generally bright in the morning; thunderstorm between 2 P.M. and 3 P.M.; then fair again.

29th.—Cool and frequently cloudy, with showers in the morning and in the evening.

30th.—Fair with occasional sunshine.

This week has afforded a good illustration of the libellous "typical English summe , three hot days and a thunderstorm" We had some heat on Sunday, Monday, and Tuesday, and after then it was thunder and rain till nearly the end of the week.—G. J. SYMONS.

* Falling before 9 A.M. the amount was, of course, entered in last week's table in accordance with the regular rule as to rainfall measurement.

FLORAL DECORATIONS.

FLOWERS are more extensively employed for decorative purposes in civilised countries at the present time than has ever been the case before, and amongst the Anglo-Saxon race on both sides of the Atlantic the increased attention paid to floral decorations has been most remarkable within quite recent years. In London alone the enormous quantities of flowers employed daily can scarcely be imagined, even by those who frequent Covent Garden Market, and to whom the thousands of boxes sent in from the provinces and the Continent at all times of the year afford a familiar sight. From the itinerant street purveyor's Roses or buttonholes at a penny each, or the modest 6d. and 1s. posies of the shops, to the elaborate bouquets or wreaths which the fashionable florists retail at a guinea and upwards, there is every gradation in merit and value to meet all tastes and purses. Growers complain that prices are low, but the purchasers increase in numbers, and flowers are no longer regarded as a luxury solely within the reach of the affluent. The majority are content with a simple vase or two decked with flowers and foliage to be renewed as frequently as means permit, and arranged as graceefully as the character of the material allows. In the homes of the wealthy floral decoration has, however, developed into an art of considerable importance, and whatever ingenuity can devise or tasteful skill can execute, to increase the diversity of attraction, is in demand.

Few of the leading exhibitions are deemed complete unless classes are specially devoted to floral decorations, and some societies have wisely appropriated a goodly share of their funds to the encouragement of what is invariably one of the most interesting and popular departments of a show. Not only do they furnish an important attraction, but they are also educational to a great extent, as amateurs who engage in such work for pleasure, and gardeners who include it amongst their duties, can always learn something at an exhibition where competition is keen in the floral classes. The value from this point of view depends to a great extent upon the care and consistency with which the awards are made, as some kind of guide is then furnished both to exhibitors and visitors. Of course as much latitude as possible must be allowed, and any attempt at restricting exhibitors within narrow limits would utterly defeat the objects in view, restrain originality, and induce a stereotyped style that is most to be avoided. Still, adjudicators ought to be able to determine some broad principles and adhere to them, as for instance whether simplicity or elaborateness, lightness or massiveness, are preferable. It is too often apparent that fancy rather than judgment decides these matters, and consequently dissatisfaction frequently and naturally arises.

The largest and most important exhibition of floral decorations in the metropolis is that held by the Royal Botanic Society in connection with their Evening Fête in the Regent's Park Gardens. This is one of the events of the London season, and though the gathering for the present year, held last week on the 4th inst., was not favoured by the best of weather, it attracted, as it invariably does, a large number of visitors. The large marquee employed for the Summer Shows was devoted to the table decorations, hanging baskets, groups for recesses or fireplaces, and groups of plants or cut flowers from various nurserymen; the long approach tent being occupied with bouquets, stands of flowers, &c. About twenty tables were displayed in the two classes for them, and it can be imagined that considerable diversity of taste prevailed amongst so many, which was still further accentuated by a corresponding diversity in the awards. Some exhibitors had endeavoured to merit recognition by a light and graceful style of dressing the usual plain glass trumpet vases, others loaded the tables with massive crystal or china vessels, the flowers evidently constituting a secondary consideration. The simple unpretentious style was well represented by a table that did not secure a prize, wreaths of crimson, white, and yellow Roses lightly thrown on the cloth surrounding a basket of Roses and Stephanotis, with wicker-covered pots of Rhyncospermum jasminoides and Fern at the ends. One table, which gained the first prize in the class, was pleasingly decorated with Moss Roses, a few yellow Roses, Odontoglossums and Adiantum fronds, but there were rather too many stands, and it was marred by a curious piece of artificiality. Four small plain glass lamps had wire circles surrounding the chimneys upon which were laid Fern fronds and Roses as a shade. They were, however, quite useless for this purpose, as when the lamps were lighted anyone sitting at table would have had the glare full in their eyes, and the heat caused the Ferns to shrivel and the flowers to wither in quite a painful manner. An unusually heavy arrangement was placed second to this which can only be commended for the fact that the few flowers employed, chiefly Carnations, harmonised well. The light, graceful, and cloudy Gypsophila paniculata was freely employed in several instances, as were also the orange, yellow, and white varieties of Papaver nudicaule, with Aquilegia chrysantha, and two excellent arrangements of these flowers, with Lygodium scandens and Adiantum, were contributed, one gaining the third prize for Mrs. Sperling, and the other in Mr. Chard's best style, being passed by the Judges. The whole of those referred to were laid for dessert, and the selection of the fruit added materially to the beauty and finish of the arrangements.

The ordinary dinner tables without dessert were somewhat similar in characteristics and the flowers employed, but the winner of the first prize (Mr. W. C. Buster) displayed some originality in arrangement. In the centre was a tall glass trumpet vase containing at the top a few small white Campanulas, two or three pink Begonias, Gypsophila, and Asparagus plumosus; at the base the white variety of Gladiolus Colvilli, double pink Ivy-leaf Pelargoniums and Fern fronds. Two light side arches were covered with Asparagus, a few similar flowers to those in the vase, and a rich velvety wreath of Cissus discolor, small glasses being filled with Roses and Pancratiums. In the arrangement of flowers and foliage for a sideboard English and Spanish white and yellow Irises were general favourites in stands or bowls, while one exhibitor gained a prize for a "floral lyre" of Marguerites, pink Carnations, Adiantum and Fittonia leaves—rather too much of an artistic curiosity for many tastes.

The bouquets were numerous, and represented all gradations between the most elaborate and the most simple. One was selected as the best ballroom bouquet that possessed the merit of an informal arrangement, but there was an undue display of wire and a want of finish that detracted from its merits greatly. Odontoglossum crispum, Gladiolus Colvilli albus, Roses and Carnations were the principal flowers. Several of the other bouquets were preferred by many visitors to this, both for the material employed and the general finish—two essential points. The flowers for a bridal bouquet cannot be too pure, and however well they may be arranged the effect is spoiled if what may be termed the machinery is too plainly exposed. The second prize bouquet was better in both the respects mentioned, Pancratiums, Eucharis Mastersi, Roses, Stephanotis, and double Tabernæmontana constituted the principal flowers, which were placed together in a natural and free manner but not quite so irregularly as the first. Why another fine bouquet of the same character was passed unrecognised it would be hard to determine.

The most interesting class in this section was that for a ball-

room bouquet, and the eighteen competitors presented a sufficient diversity of styles to satisfy all tastes and fancies. The one selected for first honours was a most elaborate production, about 15 inches high from the paper, and 18 inches in diameter, a substantial load for a lady to hide herself behind. It was composed mainly of Cattleyas, with a few Odontoglossums and Fern fronds, and it must be admitted that the arrangement and making were admirable for such a large bouquet. In remarkable contrast to this was the second prize bouquet, rather less than half the size, formed of a few blush-tinted Roses, Gladiolus Colvilli albus, and Adiantum fronds, simple in the extreme, and elegant, but so totally dissimilar in all respects from the first, that it seemed strange, after honouring one bouquet distinguished by its elaborate style, several others of the same kind, and but few points inferior to the first, should be passed over. At the same time it is wise to encourage these smaller and more simple productions, and if the Judges had adopted the bold course of placing it first the awards would have been more consistent. One enormous and heavy bouquet was properly omitted, and why such fatiguing examples are shown cannot be understood, they would be enough to tire a strong-handed footman. A third prize was awarded to an exceedingly original example that could scarcely be termed a bouquet; it was really a loose bunch of Grasses and Mignonette, with a few flowers of double scarlet Zonal Pelargoniums, with streamers of scarlet and bottle-green ribbons. A pretty and simple bouquet was composed of Mignonette and Miss Jolliffe Carnations, and a loosely disposed bunch of crimson, yellow, and creamy Roses was attractive; another of crimson Roses and single yellow Briars was pleasing, and the only faults in still another handsome Rose bouquet was rather too much crowding and flatness.

Groups of flowers with the stalks in water, but neither tied nor wired, included several tasteful exhibits. The leading group composed of ten large pale pink and white Pæonies on long stems with plenty of foliage very naturally dispersed in a somewhat small stand. If the latter had been a little larger and bolder, more in proportion to the massive character of the flowers, it would have improved their appearance. Next to this was placed a neat basket suspended on a tripod and filled with Gypsophila, Odontoglossums, Roses, Phalænopsis, and Asparagus. One of the simple and graceful contributions (third prize) in this class was, however, a tall trumpet plain glass vase furnished with long drooping sprays of Russelia juncea bearing numbers of its tubular bright coral red flowers, and it was quite refreshing to see an old favourite, but now neglected plant, being utilised to the exclusion of the conventional decorative flowers.

At Richmond on the same day an excellent display of floral decorations was held, one of the three large tents being exclusively devoted to these classes, Roses and other cut flowers. It was rather unfortunate that the dates of these two Societies clashed, as it accounted in a great measure for the absence of competitors in the table decoration class in which such liberal prizes are offered by Lady Ellis. Numerous elegant stands and baskets of flowers were shown, but the bouquets were much overcrowded. In several cases the stands employed were not in accordance with the style of arrangement adopted, light tastefully placed flowers in a heavy stand, or *vice versa*, being a fault too often apparent at shows.—L. Castle.

INCREASING STRAWBERRY PLANTS.

When Strawberry plantations are neglected their whole surroundings soon become crowded with runners, but this is not desirable, and should be avoided. Many of them are formed now, and by the time the fruit is all ripe and gathered they will be very numerous. It is then the cultivator should determine what he will do. If no new plants are wanted cut the young ones in close round the old stools or rows. But in the majority of cases young plants will be wanted, and these should be secured at once, either to pot for forcing in the spring months or to form new plantations. Great attention is often given to layering and raising the plants intended for forcing, but those for planting in the new quarters are often lifted and planted without any preparation; but this is a mistake, as with proper care they will always bear a quantity of fruit the first year after planting, and I have known them bear heavily, whereas the carelessly reared ones seldom have any fruits worth gathering until the second year.

The best way is to layer each runner into a 3-inch pot. Place a few leaves or a little rough material at the bottom of each, then fill close to the rim with fibrous loam to which a little manure has been added, and make the soil very firm. Lift each runner suitable for layering from the ground, but do not break their connection with the old plant. Place the young plant on the surface of the soil in the pot, and if the roots have some of the soil of the ground attached let them into the soil in the pot, and layering in this case is completed. If the roots are only beginning to show secure the runner with a peg close to the neck of the young plant. The young roots will penetrate the new soil in a few days, and they will soon grow rapidly. In dry bright weather supply water daily, and when they have been layered ten days or so turn one or two of them out of the pots, and if the roots have taken a substantial hold of the soil cut them away from the plants, and collect them all together on a hard base, such as a walk. This is to prevent rooting through the bottom of the pots. The foliage will droop a little for a day or two, but this is harmless, and in a week or ten days after taking them off they will be ready for either potting or planting. We like to do both before the pots are filled with roots. When the roots are too numerous and in a firm ball the plants do not grow away freely if transferred to other soil.

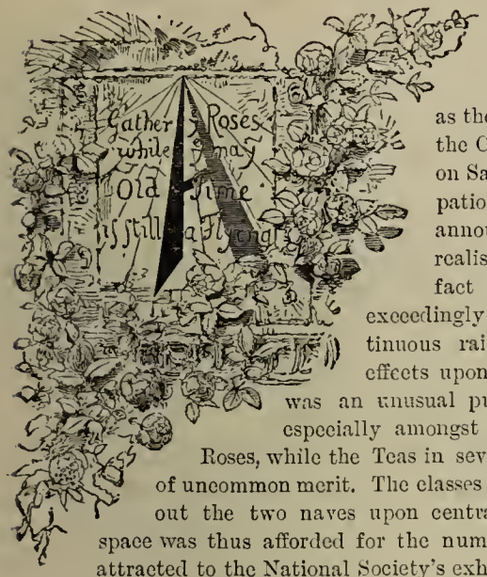
Another system is to cut fibrous turf into pieces about 4 inches square. They are turned upside down, and the young plants pegged on to them. The roots soon penetrate the turf and confine themselves to it. Such plants invariably grow well, and this plan is superior to that often adopted of allowing the runners to root into the ordinary soil. Many of the roots of these will be broken in lifting; some will have no soil attached to them, and all will receive a check which cannot occur with those in turves or pots.—J. Muir, *Margam.*

SHRUBS SUITABLE FOR SEASIDE PLANTING.

The publication of a few notes recently made of shrubs luxuriating on the seacoast in Hampshire, Dorsetshire, and North Devon, may prove useful to those of your readers who have to do with the planting and beautifying of bare spots, cliffs, or in seaside towns. In Bournemouth, and Boscombe Chine, close by, the green Euonymus, in some cases half buried in sea sand, does much better than the Tamarix, and is therefore planted extensively in the public and private gardens, also as hedges underneath the Pine trees on each side of the principal roads in Bournemouth. The pretty garden opposite the "Royal Victoria Hotel," Swanage, and close to the sea is completely enclosed by luxuriant hedges of the green and golden Euonymus, while a few hundred yards farther up the town the Euonymus and Aucuba japonica, planted in a garden attached to John Wesley's house, and sloping to the sea, are the picture of health. But nowhere have I seen such grand specimens of Euonymus as at Ilfracombe, many of the bushes being 9 feet high and as much through, within a hundred yards of the sea. In the grounds attached to St. James's Church there are several dozens of fine specimens. Another shrub, and this a flowering one, that does equally well at Ilfracombe, is Escallonia macrantha, trained up the south and west walls of "Hotel Ilfracombe" and other buildings of less importance throughout the town, as well as in bush form from 9 to 10 feet high and as much in diameter on the lawns in front of the several villa mansions on the south side of the steep cliffs in this picturesque North Devon town. The soil (red loam), as well as the climate of Ilfracombe, admirably suits the requirements of the shrubs indicated, also Berberis Darwini and Weigela rosea. The latter popular flowering shrub is grown extensively and well in several towns on the North Devon coast, including Lee, three miles west of Ilfracombe, and the latter favourite resort, Watermouth Castle, Combmartin, Lynton, and Lynmouth, in all of which places the Weigela is growing luxuriantly; the flowers, too, being more plentifully produced, larger, more substantial, and of a brighter hue than they are met with on places away from the sea. The Sea Buckthorn (Hippophäe rhamnoides) is also suitable for planting close to the sea, but the only place I have seen it growing is Tyninghame, the beautiful East Lothian residence of the Earl of Haddington, near Prestonkirk. There is quite a plantation of it near Whitberry Point, and within a few dozen yards of the German Ocean. The bright orange-coloured berries with which the Willow-like shoots are studded are very effective when contrasted with its silvery foliage. The salt spray with which the Sea Buckthorn is frequently washed has no injurious effect on it. Is it not surprising that it is not more frequently met with in the vicinity of fashionable watering places?—H. W. Ward.

NATIONAL ROSE SOCIETY.

JULY 7TH.



MOST extensive and highly satisfactory Exhibition for such a season as the present one was held at the Crystal Palace, Sydenham, on Saturday last. The anticipations which a correspondent announced last week were fully realised, notwithstanding the fact that the weather was exceedingly unfavourable. The continuous rain had left unpleasant effects upon many blooms, but there was an unusual proportion of fine flowers, especially amongst the dark-coloured H.P. Roses, while the Teas in several leading stands were of uncommon merit. The classes were distributed throughout the two naves upon central tables, and abundant space was thus afforded for the numerous visitors invariably attracted to the National Society's exhibitions.

NURSERYMEN'S CLASSES.

The principal class in the Show was that for seventy-two blooms, distinct varieties, and the challenge trophy, value sixty guineas, with the first prize, was won by Mr. Frank Cant of Colchester, whose fine collection well deserved the coveted honour. Rarely have neater or more finished blooms been staged by this exhibitor. The Teas were exquisite, and the H.P.s remarkable for freshness and purity of colour. Mr. Cant is to be heartily congratulated. The following varieties were represented :—Back row : Madame I. Pereire, Charles Lefebvre, Alphonse Soupert, Marie Baumann, Pride of Waltham, Prince Arthur, Duchesse de Morny, Prince Camille de Rohan, Madame Eugène Verdier, Ulrich Brunner, Her Majesty, A. K. Williams, La France, Crown Prince, François Michelon, Général Jacqueminot, Heinrich Schultheis, Earl of Pembroke, Souvenir d'un Ami (very fine), Louis Van Houtte. Captain Christy, Dr. Andry (a beautiful bloom), Merveille de Lyon, and Duke of Edinburgh. Middle row : Madame Ducher, very bright and fresh ; Etienne Levet, Duke of Connaught, Souvenir de la Malmaison, Charles Darwin, Maréchal Niel, Sultan of Zanzibar, Annie Laxton, Exposition de Bric, Niphetos, Thos. Mills, Souvenir d'Elise, Alfred Dumesnil, Marie Van Houtte, Countess of Rosebery (both splendid), Mrs. John Laing, Duke of Teck, Madame Lambard, Countess of Oxford, Madame Gabriel Luizet, Dupuy Jamain, Baroness de Rothschild, Madame Alphonse Lavallée, and Mat Baron. Front row : Pride of Reigate, E. Y. Teas, Auguste Rigotard, Horace Vernet (very fine), Madame Bravy (splendid), Le Havre, Catherine Mermet, Glory of Cheshunt, Madame de Watteville, Duke of Wellington, Duchess of Edinburgh, Camille Bernardin, Rubens, Alfred Colomb, Madame Cusin, Victor Hugo, Viscountess Folkestone, Abel Carrière, Jean Ducher, Fisher Holmes, Marie Verdier, Duchess of Bedford, M. Noman, and Rosieriste Jacobs. Very fine also was the second prize lot of Messrs. Paul & Son, The Old Nurseries, Cheshunt. Such varieties as Paul Neyron, A. K. Williams, Charles Lefebvre, François Michelon, Ulrich Brunner, Mrs. Chas. Wood, and Général Jacqueminot were magnificently shown, and there were good examples of many other popular varieties. Mr. Cant's victory was not gained without a close struggle. Mr. B. R. Cant of Colchester took third place with a most meritorious collection, and Messrs. John Cranston, King's Acre Nurseries, Hereford, were fourth. From the collection of the last named exhibitor was selected the best Hybrid Perpetual in the Show, an example of Etienne Levet which has perhaps been rarely equalled before. This superb bloom was 6 inches in diameter, deep, massive, perfect alike in form and colour. There were five exhibitors in this class.

In class 2, forty-eight distinct varieties, three blooms of each, there were four competitors, and Mr. B. R. Cant improved on his previous display by securing the premier honours. With but few exceptions the blooms were remarkably neat and fresh, and bore the finish invariably distinguishing the exhibits of this famous exhibitor. The varieties shown are enumerated. Back row : Charles Lefebvre, Merveille de Lyon, A. K. Williams, Souvenir d'un Ami, Prince Camille de Rohan, Madame E. Verdier, Horace Vernet, Madame Gabriel Luizet, Marie Baumann, Heinrich Schultheis, Duke of Edinburgh, Duchesse de Morny, Sénateur Vaisse, Marie Verdier, Xavier Olibo, La France, Dr. Sewell, Baroness Rothschild, Dupuy Jamain, Etienne Levet, Général Jacqueminot, Madame C. Joigneaux, Louis Van Houtte, and Madame I. Pereire. Front row : John Hopper, Alfred Colomb, Mrs. John Laing, Madame Ducher, Souvenir d'Elise, Duke of Wellington, Madame Lambard, Maurice Bernardin, Marie Van Houtte, Ulrich Brunner, Niphetos, Victor Hugo, Catherine Mermet, Reynolds Hole, Madame Cusin, Prince Arthur, The Bride, Alfred Dumesnil, Violette Bouyer, Fisher Holmes, Innocente Pirola, Sultan of Zanzibar, Madame Bravy, and Thos. Mills. Messrs. Paul & Son, Cheshunt, were second. Some remarkably fine blooms were observable in their stands, notably Ulrich Brunner, Charles Lefebvre, Duke of Edinburgh, A. K. Williams, and François Michelon, but many of the light coloured flowers were somewhat weak. Mr. Frank Cant was third, and Mr. Charles Turner of Slough fourth. There was not much to choose between these two.

Class 3, forty-eight single trusses, proved to be the most popular of all in the nurserymen's section, seven competing, and was highly interesting, producing in the first prize collection of Mr. William Rumsey, Waltham Cross, one of the freshest, neatest and most generally creditable collections of blooms that have been seen at any of the National Society's shows. Here and there a bloom might be observed that was a little past its best, but the majority were perfect. The varieties represented were as follows :—Back row—Ulrich Brunner, a really beautiful bloom ; Lady Mary Fitzwilliam, Madame Nachury, Charles Lefebvre, La France, Sir Garnet Wolseley, Mdlle. E. Verdier, Duke of Edinburgh, Countess of Rosebery, Duchesse de Caylus, Madame Sophie Fropot, Prince Arthur, Merveille de Lyon, François Michelon, A. K. Williams, very fine ; and Baroness Rothschild. Middle row :—Comtesse de Serenye, J. S. Mill, Le Havre, Catherine Mermet, Dr. Andry, Helen Paul, Hippolyte Jamain, Duchess of Bedford, Benoit Comte, Queen of Queens, Etienne Levet, Her Majesty, Xavier Olibo, Alfred Colomb, Pierre Notting, and Madame I. Pereire. Front row :—Lord F. Cavendish, Duke of Connaught, Duchesse de Morny, Harrison Weir, Général Jacqueminot, Lord Macaulay, Madame Gabriel Luizet, Eclair, Marie Verdier, Madame V. Verdier, Alba Rosea, Star of Waltham, Heinrich Schultheis, Camille Bernardin, Grace Darling, and Louis Van Houtte. Second place was taken by Messrs. J. Jefferies & Son, Cirencester, their Duke of Albany was a splendid bloom ; Jean Ducher and Madame Clemence Joigneaux were also good, but the blooms generally lacked the freshness of the first prize stand. Messrs. G. Cooling and Sons, Bath, were an excellent third. The remaining prize fell to Mr. G. W. Piper, of Uckfield.

A collection of moderate excellence from Messrs. G. & W. H. Burch, Peterborough, secured the premier award in the class for twenty-four distinct varieties, single trusses. The varieties were—Back row : Etienne Levet, Grace Darling, Camille Bernardin, Magna Charta, Xavier Olibo, Her Majesty, Harrison Weir, and Madame Eugène Verdier. Middle row : Madame Gabriel Luizet, Comtesse d'Oxford, Niphetos, Ulrich Brunner, Comtesse de Serenye, Heinrich Schultheis, Souvenir de Paul Neyron, and Exposition de Bric. Front row : Sénateur Vaisse, Marie Van Houtte, Louis Van Houtte, Innocente Pirola, François Michelon, Lady Mary Fitzwilliam, Marie Baumann, and Jean Ducher. Mr. G. Mount, Rose Nurseries, St. Dunstans, Canterbury, followed with Marie Baumann, La France, Camille Bernardin, and Alfred Colomb amongst his best blooms. Third place was taken by Mr. John House, Eastgate Nurseries, Peterborough, and fourth by Mr. J. Mayo, St. Mary's Road Nursery, Oxford. There were six competitors.

Class 5 was provided for three trusses each of twenty-four distinct varieties, and the winning stand came from Mr. G. Prince, 14, Market Street, Oxford, who showed in excellent form. The varieties in the back row were Grace Darling, Alba Rosea, A. K. Williams, The Hon. Edith Gifford, Comtesse de Nadaillac, Ulrich Brunner, Captain Christy, E. Y. Teas, Baroness Rothschild, Duke of Edinburgh, Merveille de Lyon, and François Michelon ; those in the front Catherine Mermet, Earl of Pembroke, La France, Madame C. Joigneaux, Madame Gabriel Luizet, Anna Ollivier, Auguste Rigotard, Marie Van Houtte, Marie Verdier, Lady Mary Fitzwilliam, Princess of Wales, and Viscountess Folkestone. Messrs. J. Jefferies & Son followed, their best blooms being La France, François Michelon, Lady Mary Fitzwilliam, and Madame Gabriel Luizet. Messrs. Cooling & Sons were third, and Mr. John House fourth. Six competed.

AMATEURS' CLASSES.

Though considerable inequality was observable in the merit of the exhibits in these classes, the general quality far exceeded what could have been expected after such unfavourable weather. Plenty of damaged blooms were seen, but where they had escaped the storms remarkable examples were observable, of the dark varieties especially, size, substance, and colouring being admirable. There was, however, a prevailing tendency to coarseness, and few succeeded in making up a box of good blooms all through, even in the small classes. This rendered the few exceptions the more noticeable, and one of the finest collections of blooms in the Exhibition was that which secured for the year R. N. G. Baker, Esq., Heavitree, Devon, the Amateurs' Challenge Trophy, value 60 guineas, and the first prize in the class for forty-eight, distinct, single trusses. These were of good substance, clean, and richly coloured, the varieties being as follows, taking them from left to right. Back row : Centifolia rosea, Ulrich Brunner, Captain Christy, Etienne Levet, Duke of Edinburgh, Merveille de Lyon, Comtesse d'Oxford, A. K. Williams, Hippolyte Jamain, Alfred Colomb, Duc de Montpensier, Marquise de Castellane, Marie Baumann, Mdlle. Marie Rady, Charles Lefebvre, and François Michelon. Middle row : Madame Victor Verdier, Prince Camille de Rohan, Marshall P. Wilder, La France, Madame Marie Verdier, Lady Sheffield, Gloire de Bourg la Reine, Thomas Mills, Madame Alphonse Lavallée, Madame Eugène Verdier, Dupuy Jamain, Sultan of Zanzibar, Auguste Rigotard, Baroness Rothschild, Dr. Andry, and Duke of Wellington. Front row : Abel Grand, Comte de Raimbaud, Mrs. Laxton, Charles Darwin, Duke of Teck, Jean Soupert, Marguerite de St. Amand, Reynolds Hole, Camille Bernardin, Prince Arthur, Général Jacqueminot, Madame Gabriel Luizet, E. Y. Teas, Villaret de Joyeuse, Louis Van Houtte, and Beauty of Waltham. Of the five other competitors, W. G. Grant, Esq., Ledbury, Hereford, was second, his blooms

seeming to have suffered more severely in the stormy weather, but the specimens of Ulrich Brunner, Prince Arthur, Alphonse Soupert, and Duchesse de Morny were excellent. A. Slaughter, Esq., Jarvis Villa, Steyning, was third, and T. B. Hall, Esq., Larchwood, Rockferry, was fourth.

Only four stands of twenty-four varieties, three trusses each, were staged, Mr. R. N. G. Baker again leading with bright good examples of the undermentioned in two rows. Back row: Ulrich Brunner, Duke of Edinburgh, Merveille de Lyon, Madame Victor Verdier, François Michelon, La France, Prince Camille de Rohan, Etienne Levet, A. K. Williams, Marquise de Castellane, Charles Lefebvre, and Alfred Colomb. Front row: Auguste Rigotard, Madame Eugène Verdier, Général Jacqueminot, Mdlle Marie Verdier, Thomas Mills, M. E. Y. Teas, White Baroness, Mdlle. Marie Rady, Madame Gabriel Luizet, Dr. Andry, Marie Baumann, Duke of Wellington. Mr. W. G. Grant was second, blooms of Dupuy Jamain and Duke of Edinburgh being very notable. Mr. S. P. Budd, Bath, and Mr. A. Slaughter followed with smaller blooms.

There was the same number of exhibitors in Class 8 for thirty-six single trusses, Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, winning first honours with an excellent collection, in which the blooms were distinguished by their good colour. The varieties were arranged in this order—Back row: Mrs. Baker, A. K. Williams, Madame I. Pereire, Captain Christy, Etienne Levet, Mrs. J. Laing, Marie Baumann, Lady Mary Fitzwilliam, Comtesse d'Oxford, La France, Horace Vernet, and François Michelon. Middle row: E. Y. Teas, Madame Gabriel Luizet, Louis Van Houtte, Madame Marie Verdier, Alfred Colomb, Duke of Bedford, Mdme. Eugène Verdier, Mdlle. Marie Rady, Dr. Hogg, The Bride, and Général Jacqueminot. Front row: Comtesse d'Oxford, Ferdinand Lesseps, Dupuy Jamain, Mrs. Laxton, Charles Lefebvre, Princess of Wales, Devienne Lamy, Xavier Olibo, Duchesse de Caylus, Richard Laxton, Earl of Pembroke, and Lord Macaulay. Mr. E. B. Lindsell, Bearton, Hitchin, was second, Devoniensis, A. K. Williams being uncommonly good, but others had suffered materially. Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, was third, and Mr. Harrington, gardener to E. Mitchell, Esq., Corbets Fey, Romford, was fourth.

Mr. Ridout was again successful in class 9 for eighteen distinct varieties, three trusses each, the blooms being as notable for their colour as in the preceding class. These were as follows—Back row: Madame Gabriel Luizet, Sénateur Vaisse, Lady Mary Fitzwilliam, A. K. Williams, Captain Christy, Etienne Levet, Marie Baumann, Mdlle. Marie Finger, and Alfred Colomb. Front row: M. E. Y. Teas, Madame Lambard, Horace Vernet, Mdlle. Marie Verdier, Louis Van Houtte, François Michelon, Xavier Olibo, Comtesse d'Oxford, and Général Jacqueminot. Messrs. Lindsell and Brown were second and third, the fourth prize being withheld.

Seven stands of twenty-four varieties, single trusses, were staged in Class 10, Mr. R. E. West gaining premier honours for fresh and admirable blooms rather more even in quality than in most other classes. The varieties were—Back row: Etienne Levet, Duke of Edinburgh, Captain Christy, Maurice Bernardin, Dupuy Jamain, Charles Lefebvre, Camille Bernardin, and Madame I. Pereire. Middle row: Sénateur Vaisse, Marie Verdier, Comte Raimbaud, extremely fine; François Michelon, Marie Baumann, Madame Gabriel Luizet, A. K. Williams and one incorrectly named Duke of Wellington. Front row: Countess of Rosebery, Innocente Pirola, Duke of Teck, Louis Van Houtte, Dr. Andry, Xavier Olibo, Her Majesty, and Prince Camille de Rohan. The Rev. H. A. Berners, Harkstead Rectory, Ipswich, was second with neat blooms of Horace Vernet, A. K. Williams, Duke of Edinburgh, and Mdlle. Marie Verdier. The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was third; and Mr. J. Gurney Fowler, Woodford, was fourth.

Amongst four exhibitors of twelve varieties, three trusses each (Class 11) Mr. R. E. West continued his success, and won the first prize for substantial blooms, some of which were rather weather-beaten. The varieties were Etienne Levet, Marie Baumann, Louis Van Houtte, La France, Dr. Andry, Duke of Edinburgh, Madame Victor Verdier, Madame Gabriel Luizet, A. K. Williams, François Michelon, Général Jacqueminot, and Le Havre. The Rev. A. Foster-Melliar; Mr. H. Evans, Marston, Oxon; and Mr. G. Christy, Westerham, followed in that order.

Class 12 was provided for eighteen distinct varieties, single trusses, and the nine stands shown made a good display. Mr. M. H. Foster, Ashford, Kent, was first for a beautiful collection comprising very fine blooms of dark varieties. Back row: Marguerite Brassac, Duke of Edinburgh, Dupuy Jamain, Marie Baumann, Captain Christy, and Ulrich Brunner. Middle row: Mdlle. Marie Verdier, A. K. Williams, Baroness Rothschild, Duke of Wellington, Madame Victor Verdier, and Empress of India. Front row; Eugène Fürst, Madame Lambard, Pride of Ashford, Bouquet d'Or, Prince Camille de Rohan, and Rubens.

The competition was also keen in Class 13, for twelve distinct, single trusses, eight boxes being shown. The Rev. Alan Cheales, Brockham Vicarage, Surrey, was adjudged first honours for an effective stand of the undermentioned varieties, the blooms fresh, and with one or two exceptions, of moderate size. Back row—Camille Bernardin, wonderfully handsome, unusually large, and first rate in substance and colour, well deserving the silver medal awarded it as the best H.P. in the amateurs' classes; A. K. Williams, Duke of Edinburgh, and Etienne Levet. Middle row—Beauty of Westerham, Marie Baumann, La France, and Alfred Colomb. Front row—Duke of Wellington, Dupuy Jamain, Madame Victor Verdier, and E. Y. Teas. Lieut-Col. F. Standish Hore, St. Asaph, secured the second place; Mr. H. Wallis, Cornsland, Brentwood, and Mr. R. L. Knight, Sittingbourne, were third and fourth respectively.

With nine varieties the Rev. T. S. Taylor, Littleton Vicarage, Evesham, was placed first, his varieties being Ulrich Brunner, La France, and Mdlle. Marie Verdier in the back row; Maréchal Niel, Camille Bernardin, and Charles Lefebvre in the middle row; and Madame Gabriel Luizet, Madame Lambard, and Baroness Rothschild in the front row. The six other stands mostly contained small blooms. Mr. C. E. Cuthell, Chapel Croft, Dorking, and Mr. L. C. Times, Hitchin, secured the remaining prizes. Five boxes of six varieties were entered, Mr. F. E. Coleby, Rosenheim, Worple Road, Wimbledon, leading with Comtesse d'Oxford, La France, Pauline Talabot, Ulrich Brunner, Victor Verdier, and Louis Van Houtte. The Rev. E. G. King, Madingley Vicarage, Cambridge; Mrs. Ponsford, Wray Park, Reigate; and Mr. G. Crofts, gardener to W. D. Freshfield, Esq., Parkside, Reigate, followed in the order named. Mr. H. Foster had the best six triplets, comprising: Duke of Edinburgh, Madame Gabriel Luizet, A. K. Williams, Ulrich Brunner, Marie Baumann, and Dupuy Jamain. The Rev. Alan Cheales was a good second; Mr. C. E. Cuthell and Mr. W. Narroway, Oxford, taking third and fourth places amongst seven competitors.

EXTRA CLASSES.

Most of these were small classes, the competition moderate except in one case. For six blooms from amateurs who had never won a prize at the National Society's Shows Mr. Percy Burnand, Reigate, won the premier award with very creditable examples of Marie Baumann, Duchess of Bedford, Auguste Rigotard, Duke of Edinburgh, Etienne Levet, and Ulrich Brunner. Mr. G. Moules, Sun Street, Hitchin, was second; Mr. W. J. Dart, Melrose Villa, Heathfield Road, Croydon, and Mr. H. V. Machin, Gateford Hall, Worksop, won the other prizes in that order, most of the blooms shown being of fair merit. There were five competitors in that and the following class for six varieties grown within eight miles of Charing Cross. Mr. W. Northover, 20, Queen's Road, Wimbledon, won the leading prize with excellent blooms of Louis Van Houtte, Charles Lefebvre, Dr. Andry, Marie Baumann, Comte Raimbaud, Général Appert. Mr. Coleby, Mr. G. Barker, Blackheath, and Mr. G. A. Marshall, 7, Seymour Villas, Anerley, were second, third, and fourth for satisfactory blooms. Only one stand of six new varieties was shown, Mr. T. W. Girdlestone, Sunningdale, Berks, winning first honours for neat blooms of Souvenir de Gabrielle Drevet, Clara Cochet, Silver Queen, Souvenir de Victor Hugo, Victor Hugo, and Mrs. John Laing.

The competition was very keen in Class 20 for six trusses of any Hybrid Perpetual Rose, fourteen boxes being staged. Mr. T. B. Hall, Larchwood, Rockferry, won the premier prize for fresh, substantial, handsome examples of Madame Gabriel Luizet. Mr. W. J. Grant won second for even bright blooms of A. K. Williams. Mr. G. Christy followed with Duke of Edinburgh, very rich in colour; and Mr. E. P. Budd was fourth for Ulrich Brunner; the Rev. F. Page Roberts having an unrecognised but admirable stand of Dupuy Jamain.

Class 21 was for twelve blooms, six of any H.P. and six of any Tea. Mr. A. Slaughter had the best of the half-dozen exhibits, fine blooms of Général Jacqueminot and Marie Van Houtte. Mr. W. J. Grant had the second place with A. K. Williams and Marie Van Houtte; the Rev. F. Page Roberts being third for the same two varieties.

TEA AND NOISETTE CLASSES.

The effects of the dripping weather were more apparent on these delicate blooms than on their larger, stronger, and darker congeners, the H.P.'s.

Class 22, twenty-four blooms, distinct.—In this class of four stands Mr. G. Prince well won the first position with Alba Rosea, good; Catherine Mermet, Princess Beatrice, a charming soft yellow bloom; Anna Ollivier, Niphetos, Sunset, Hon. E. Gifford, Comtesse de Nadaillac, handsome; Madame C. Kuster, Amazone, Cornelia Koch, Souvenir d'un Ami, Rubens, Marie Van Houtte, Jules Finger, Innocente Pirola, Madame Cusin, The Bride, Madame Lambard, good; Souvenir de S. A. Prince, the fine sport from Souvenir d'un Ami, Princess of Wales, Maréchal Niel, Adam, and Jean Ducher. Mr. B. R. Cant was second with an even stand, Madame Lambard and Catherine Mermet being the best blooms. Third, Mr. Frank Cant with neat medium blooms. Fourth, Mr. G. W. Piper, Uckfield, smaller, but cleaner.

Class 23, eighteen distinct trusses, seven excellent stands. The premier position was won by Mr. J. Mattock with Comtesse de Nadaillac, Madame Bravy, Souvenir d'Elise, Madame Willermoz, Catherine Mermet, Jean Ducher (silver medal, fine), Madame Welch, Souvenir d'un Ami, Madame C. Kuster, Madame Lambard (very rich), Innocente Pirola, Princess Olga, Amazone, Devoniensis, Souvenir de Madame Pernet, Hon. Edith Gifford, Marie Van Houtte, and Cornelia Koch. Mr. G. Mount, Canterbury, was a very good second, Messrs. Keynes & Son a close third, with the cleanest blooms of all, and Mr. C. Turner fourth.

Class 24, twelve blooms of any one variety. First, Mr. G. Prince, with excellent full blooms of Hon. Edith Gifford. Mr. B. R. Cant second with Catherine Mermet, Mr. C. Turner third (very close) with the same variety, and Mr. F. Cant fourth with Souvenir d'un Ami. Six stands.

In Class 25, for eighteen Teas or Noisettes, three trusses of each, Mr. G. Prince won the chief position with good examples of Alba Rosea, Comtesse de Nadaillac, Rubens, Souvenir de G. Drevet, Anna Ollivier, Niphetos, Souvenir d'un Ami, and The Bride. Mr. Frank Cant was an exceedingly close second, with fresher and cleaner blooms as a rule, but some rather small; Madame Willermoz was particularly fine, and Madame Lambard, Rubens, and Madame Cusin very good indeed. Third honours

fell to Mr. B. R. Cant, with blooms still a little smaller, Madame Lambard the gem of the stand. Mr. J. Mattoek, Oxford, had the remaining prize with fresh neat blooms. Five eompetitors.

Six of the classes for Teas and Noisettes were devoted to amateurs, and a very satisfaetory portion of the Show these eonstituted, as the eompetition was keen, and the blooms, in the majority of eases, mueh superior to what could have been expeeted, even by the most sanguine. In Class 26, for eighteen distinet, single trusses, there were ten exhibitors. The Rev. F. R. Burnside, Chipping Campden, took first plaee for a charming collection of fine blooms. Baek row: Catherine Mermet, Madame Lambard, Innoeente Pirola, Madame Cusin, Rubens, and Jean Dueher. Middle row: Anna Ollivier, Marie Van Houtte, Souvenir de Gabrielle Drevet, The Bride, Souvenir d'un Ami, and Caroline Kuster. Front row: Madame de Watteville, Edith Gifford, Jules Finger, Maréchal Niel, Madame Bravy, and Comtesse de Panisse. The Rev. F. Page Roberts was second with fine blooms not many points behind the first. Mr. W. J. Grant was third, and the Rev. H. A. Berners fourth, both showing well.

The premier box of twelve varieties eame from Mr. R. L. Knight, beautifully fresh blooms of Madame Cusin of remarkable substanee and colour, whieh gained the silver medal as the best Tea in the amateurs' classes, Madame Bravy, Catherine Mermet, Niphetos, Innocente Pirola, Souvenir d'un Ami, Marquis de Sanima, Devoniensis, Souvenir de Paul Neyron, Marie Van Houtte, Comtesse de Nadaillae, and Comtesse Riza du Pare. Mr. O. G. Orpen, Colchester, Rev. J. H. Pemberton, Romford, Mr. J. Brown, and Mr. E. Mitehell seeured the other prizes, the two last named being equal fourth, only one stand out of the six being thus unreeognised by the Judges.

The Rev. L. Garnett, Chester, led with nine Teas in Class 28, showing Madame Cusin, Innocente Pirola, Jules Finger, Madame Bravy, Madame Caroline Kuster, Princess of Wales, Catherine Mermet, Hon. E. Gifford, and Franeisea Kruger. Mr. F. Baker was seeond, Mr. W. Narroway third, and Mr. R. G. Tucker, Swanley, fourth. The Rev. F. S. Taylor, Evesham, had the best box of six Teas—namely, Souvenir de Paul Neyron, Maréchal Niel, Souvenir d'un Ami, Madame Lambard, Catherine Mermet, and Marie Van Houtte, exeellent blooms every one. Lieut.-Col. Standish Hore, Mr. C. E. Cuthell, and the Rev. Alan Cheales followed in the order named. (Five exhibits.) The Rev. F. R. Burnside secured the prineipal prize for twelve Teas, three trusses each, with fine examples of Innocente Pirola, Jules Finger, Caroline Kuster, Madame Cusin, Anna Ollivier, Souvenir de Gabrielle Drevet, Madame Lambard, Madame Bravy, Catherine Mermet, Maréchal Niel, Rubens, and Hon. Edith Gifford. Rev. H. A. Berners, who had the seeond plaee, showed good blooms, but slightly damaged by the weather. Mr. A. Slaughter was third, and the Rev. F. Page-Roberts fourth. (Four exhibits.) Class 31 was for six blooms of any Tea or Noisette, and this brought nine eompetitors. The Rev. Foster-Melliar was first with Marie Van Houtte, excellent; Mr. R. G. Tueker second for Madame Lambard; Mr. Mitehell third with Triomphe de Rennes, and the Rev. H. A. Berners fourth with the Hon. Edith Gifford.

OPEN CLASSES.

The first twelve of the series of elasses were for twelve blooms of specified varieties as follows:—Any yellow Rose exeept Maréchal Niel, five competitors. First Mr. G. Prinee for Comtesse de Nalaillac, handsome elean substantial blooms. Seeond Mr. F. Cant for the same variety, and third Mr. B. R. Cant with Marie Van Houtte. Any white Rose exeept Niphetos, ten exhibitors, seven showing Merveille de Lyon. First Mr. S. P. Budd with beautiful examples of that variety. Seeond Messrs. Paul & Son for The Bride. Third Mr. B. R. Cant with Merveille de Lyon. Any erimson Rose exeept Marie Baumann or A. K. Williams, eleven eompetitors. First Mr. B. R. Cant with Duke of Edinburgh of exeeptionally rieh eolour. Seeond Mr. C. Turner with Camille Bernardin. Third Mr. F. Cant for Duke of Edinburgh. Any dark velvety erimson Rose, five exhibitors. First Mr. C. Turner with Prince Arthur, of fine shape, substanee, and colour. Seeond Mr. B. R. Cant for Prince Camille de Rohan, and third Messrs. Paul & Son for the same variety.

Maréchal Niel was only represented by one box from Mr. B. R. Cant, which was awarded the third prize. Six boxes of Marie Baumann were eontributed, Mr. C. Turner leading with twelve eapital blooms, Mr. G. Mount and Mr. B. R. Cant taking the seeond and third plaees. Mr. G. Prince had the finest box of Lady Mary Fitzwilliam, followed by Messrs. Harkness and Turner. Of the eight stands of A. K. Williams Mr. B. R. Cant's was the best, Messrs. F. Cant and J. Cranston & Co. taking seeond and third prizes.

Mr. B. R. Cant was the solitary exhibitor with twelve single trusses of Niphetos, and was awarded the first prize for moderately good examples. Messrs. Paul & Son of Cheshunt were to the fore with a similar number of Her Majesty, eomprising several good and some moderate blooms.

In Class 42, twelve single trusses of any new Rose except Her Majesty, Messrs. Paul & Son were again sueeessful, showing the very promising Mrs. John Laing, the blooms, however, had suffered from the rain. In form this Rose is excellent, and the eolour is a pleasing soft pink. Mr. B. R. Cant followed with The Bride, a Tea with a delicate lemon shade and rosy suffusion, Mr. Prinee being third with the same variety.

Two exhibitors entered the elass for twelve new Roses, Messrs. Paul & Son seeuring first honours for Comte de Paris, Her Majesty, Madame Henry Pereire, Mrs. John Laing, Madame Norman Neruda, Lady Helen Stewart, Lady Alice, Madame Baulot, Victor Hugo, The Bride, Grand Mogul, and Madame Massieault. Mr. B. R. Cant was seeond, his best blooms being Lady Helen Stewart, Gloire de Margottin, and The Bride. No award was made in the class for three trusses of any new seedling Rose or sport not in eommeree, but Mr. G. Prinee had examples of the white Souvenir de S. A. Prinee, previously noted in this Journal.

Collections of "garden Roses" eomprised some interesting and attractive exhibits. Messrs. Paul & Son of Cheshunt were first, exhibiting Paqueritte, Vivid, Reine Olga de Wurtemburg, W. A. Richardson, Polyantha Simplex, Commandant Beaurepaire, Rugosa alba, Chas. Lawson (H.C.), Museosa japonica, Mrs. Bosanquet (Ch.), Russelliana, Maerantha, Polyantha, Madame Ceeile Brunner, Fulgens, Gloire de Dijon, and Dominal Boccard. Messrs. Bunyard was seeond, and the Rev. J. H. Pemberton third. The conditions speeified that all H.P.'s were to be entirely excluded, also Teas and Noisettes, included as exhibition Roses in the National Rose Society's eatalogue. Mr. House was unfortunate enough to violate the eonditions and was disqualified.

Messrs. Bunyard & Co. were sueeessful with twelve bunches of Moss and Provenee Roses, Mr. House being seeond and Mr. Paul third. The first named showed Blaneke Moreau (Moss), Little Gem (Moss), The Common Moss, Salet (Moss), White Bath (Moss), Lanei (Moss), Reine Blanche (Moss), Celine (Moss), Common Provenee, Cristata (Provenee), Unique (Provence), and the Crested Moss.

The class for twelve Roses suitable for buttonholes was a very interesting one, the eight eolleetions shown ineluding some eharming buds. Mr. J. Mattock was first, his stand including Marie Van Houtte, Rubens, W. A. Riehardson, Jean Vernet, Amazone, Homère, Ma Cupueine, Anna Ollivier, Madame Lambard, and Safrano. Messrs. Paul and Bunyard were respeetively seeond and third, showing similar varieties.

MISCELLANEOUS.

Messrs. Dobbie & Co., Rothesay, N.B., sent an extensive and beautiful eollection of Pansies and Violas, also exeellent Sweet Williams, and the dense erowd that flocked round the exhibit was the measure of its attractiveness. A finer eontribution of its kind has not been seen in the south for many a day.

Mr. Edgar Newton had on view his patent system of dry glazing, which was elosely inspected and approved by many practieal horticulturists. His new system of ventilation was attached to the small strueture, and for ease and regularity of working it is not easy to see how it ean be surpassed, and it possesses the further merit of eheapness with simplieity. It is provisionally protected for patent. The adaptability of corrugated iron sheeting with ventilators for the sides of houses was shown, the exhibitor finding it cheaper than boards for the purpose. Houses of this kind must be well suited for Peaehes and other fruits, including Tomatoes, also for Roses and Chrysanthemums, indeed for everything to whieh full light is essential for bringing out colour and quality.

A box of A. K. Williams Rose, fairly good, was exhibited by Mr. John House, who also showed W. A. Riehardson, and had a further exhibit of Strawberries. These represented eut fruits and fruiting plants of two and three years planting.

Mrs. Chaff, Park Hill Nursery, Croydon, exhibited hand and dress bouquets of Roses.

Messrs. H. Cannell & Sons, Swanley, had large groups of Tuberous Begonias, representing the best of their varieties effeetively arranged.

Mr. T. Francis Rivers, Sawbridgeworth, exhibited a remarkable eolleetion of fruit trees in pots, and several fine dishes of Peaches, Nectarines, Cherries, and Plums, most of the varieties being of his own raising. Nectarine trees 3 feet high, in 8-inch pots, were each bearing upwards of a dozen splendid fruit, some of the Peaches in 9-inch pots having even more handsome speeimens; while a tree of Guigne Anonnay, a fine early blaek Cherry in a 12-inch pot, was a marvel of eulture. It eontained dozens of heavy elusters that, if gathered, would have more than filled a half-bushel basket. Mr. Rivers' packing must be equal to his eultural resources, for the trees had not a leaf or fruit injured. They attracted erowds of visitors. The dishes of fruit, eomprised of Peaches, Galande, Dagmar, Early Silver, and some large unnamed seedlings; of Nectarines, Dryden, Newton, larger and better in eolour than Lord Napier, whieh was good; Pine Apple, Otway, reddish orange; Stanwiek Elruge and the rich Goldoni; Cherries, Early Rivers, black, very fine, and Bigarreau de Schreken, also blaek and splendid. When such fruits are produeed by trees in pots in a plain eool house with rough boarded sides and a glazed roof, it is a matter of surprise that they are not more common in gardens. A dish of the Curlew Plum also merits notiee—a medium-sized bluish purple fruit, and the tree as eonstant in bearing as the Early Prolific, and that is sufficient, because it scarcely ever fails. This eolleetion of fruit was quite a feature of the Exhibition.

Messrs. Sutton & Sons, Reading, offered three prizes for speeimens of Melons Imperial Green Flesh, Scarlet Invincible, or Hero of Lockinge. Mr. W. Palmer, gardener to W. F. Diek, Esq., Thames Ditton, was first with a fine fruit of Hero of Lockinge, Mr. C. J. Waite, Glenhurst Gardens, Esher, being seeond. The same firm also offered prizes for two dishes of Peas, and Mr. Waite won the first award.

Messrs. J. Carter & Co., High Holborn, offered prizes for the best fruit of Blenheim Orange Melon, whieh were won by Mr. J. Anderson Rose, Wandsworth Common, and Mr. Waite.

NOTES ON PLANTS.

Clematis Sir Garnet Wolseley.—As an early flowering variety this Clematis is one of the best. At the present time it eovers a west wall about 15 feet high, half as mueh wide, and its

flowers are produced in profusion over the whole space. Annually it flowers in the same manner, thus rendering what otherwise might be a dull spot particularly showy. I find a mixture of loam, peat, and manure suits these plants, and copious supplies of liquid manure at the time when growth is being made adds much to their future flowering propensities. All this would be of little avail if pruning the shoots was not carried out in a manner agreeable to the section to which this variety belongs—viz., the C. patens spring-flowering type. The C. Jackmanni type, for instance, require close pruning, but in this instance a mere shortening of the points is all that is needed ; but in our case the wall is much higher, therefore we do not prune at all. The points are damaged by strong winds, which answers the purpose of pruning.

Silver Hollies.—At this season of the year not the least effective shrubs are Silver Hollies. When new growth is being made the young leaves assume a bronzy hue, which in contrast with the silver foliage of the older leaves is very striking either at a distance or for close inspection to those who admire the different tints the foliage of various trees and shrubs bear at a time when new growth is being made. A close annual pruning of Silver Hollies renders the effect named more striking.

Fabiana imbricata.—A desirable plant to cultivate for the hardy Heath bed, although it grows strongly when the conditions are favourable—open position to the sun, sheltered from north and east winds. It delights in good fibrous peat, does not grow in a straggling loose manner, but preserves an upright compact growth. It never fails to flower profusely during June, and lasts a long time in good condition. Its free flowering character is thoroughly exemplified by some young plants which were raised from cuttings in a cold frame last September, and are now covered with flowers. A stock of plants is easily obtained in the above manner. As the plant has an upright habit of growth, to secure a bushy plant the leading shoots should be topped while in a young state the first season, the same treatment being adopted for the first two or three years. I lately saw a very fine specimen, which was planted out under a verandah with a glass roof facing south. Growth was freely made ; it was covered with the largest pure white blossoms I have yet seen. A thorough ripening of the previous year's wood no doubt assisted the flowering.

Gladiolus Colvilli.—The varieties of the above are useful plants to grow for early indoor supply of flowers. The snowy white variety, The Bride, is as choice a flower as it is possible to have at this time of the year. Cardinalis, when a little colouring is wanted to associate with the former, is one of the best. So simple in cultivation are these varieties that they ought to be more generally grown in private gardens. We succeed with them by placing three or four corms in a 48-sized pot, using sandy loam with some decayed manure added. About the middle of October this is done, placing the pots on a shelf in the greenhouse, which is kept cool. Scarcely any water is given for a time beyond keeping the soil moist until growth is well started, when water is freely supplied, alternating the supply with tepid liquid manure. Here the plants remain until they are in flower. For the decoration of rooms in the house they are equally as well suited as they are in a cut state for filling vases.

Dogwood.—The common Dogwood is most useful when planted under the shade of overhanging boughs of large forest trees, and there are few really good shrubs suitable for planting in such a position. It is now densely clothed with deep green foliage, surmounted by its white flowers looking quite cheerful. During the winter, when leafless, Dogwood makes a bright show, the bark of its branches having quite the colour to effect this—a warm reddish tinge. Indeed any plant that will flourish under the shade of trees, no matter how common, ought to be encouraged.

Deutzia gracilis in the Shrubbery.—In the South of England this Deutzia makes a good shrubbery plant, remaining for many years in a comparatively dwarf state. It grows bushy and dense, never failing to form an abundance of flower buds, which sometimes are much injured by late spring frosts before they have time to develope. When in flower it is a showy plant. The flowers last a long time, the rain seeming not to injure them in the least. As the plant can be had at so low a price it does seem strange that more of it is not seen in the shrubberies even in the South of England. Perhaps its scarcity is owing to an imperfect knowledge of its adaptability for the open borders.

Allium Moly.—For planting in the mixed shrubbery where space between the shrubs and trees will not admit of tall-growing herbaceous plants, and which places require brightening, this Allium is excellent. It grows luxuriantly in almost any kind of soil ; particularly is this so in strong soil approaching closely to clay. It throws up numerous flower spikes, which develope showy bright yellow umbel-shaped flowers. The disagreeable odour emitted from this plant when the leaves are disturbed is the most objectionable part in connection with this Allium.

Viburnum Opulus.—I have never seen the Guelder Roses flowering so freely and so finely as they are doing this year, which is owing somewhat to the thoroughly ripened wood last season consequent on such a hot summer as that experienced. It thrives and flowers freely in stiff retentive soil, producing large heads of bloom, while the foliage is dense green. When in a small state three or four plants massed together in the mixed shrubbery are most effective, as well as useful for cutting where white flowers are in much request.

Phacelia campanularia.—This annual is in fine condition now, flowering so freely and early as it does. Its deep Gentian-like blue is at once attractive, and it is a pity that it does not last the whole season, when it might be made to do duty as a summer bedder. The best method is to sow the seeds in the spring where the plants are to remain in preference to sowing them under glass, as the roots are so fine and shyly produced that transplanting causes a check from which it takes a long time to recover, particularly if the weather be at all hot and dry, or even if too cold at the time of planting.

Xiphium vulgare.—At the present time this is a showy plant for the herbaceous border, its bright purple flowers freely produced present an attractive appearance. No special preparation is needed to grow this Iris. Ordinary garden soil with some manure added is all that is required. The flowers are produced on long spikes, rendering it all the more valuable for cutting when required to mix with other flowers in vases. A stock of plants is readily obtained by dividing the roots where the plant grows strongly. A capital companion to the above is Iris pallida. Being a strong grower it throws up stout spikes which produce numbers of pale blue flowers when the soil in which it grows is moderately rich. This Iris is very showy for the mixed border.

Cercis siliquastrum (The Judas Tree).—It is only in a few gardens that this tree is met with. Flowering early as it does in May before the foliage is expanded renders it the more remarkable. The peculiar manner in which its flowers spring from the main stem, quite close down to the ground in some instances, adds much to its odd appearance. It is very showy when bearing its bright purple flowers, and the leaves which appear afterwards assume a deep green tint. When planted in the mixed shrubbery, except in most favoured localities and positions, the annual growth is not rapid. A south wall suits it best.—E. M. S.

CROPS THAT PAY.

BRUSSELS SPROUTS.

During a conversation with a friend a short time ago I tried to induce him to grow Brussels Sprouts as well as early Potatoes on the acre of land that surrounds his house, planting the Brussels Sprouts 3 feet apart, and the Potatoes between the rows 18 inches from plant to plant. All my efforts were fruitless, for he contended the early Potatoes were his best paying crop, and Sprouts did not pay to grow. "Believe me," he said, "they take more out of the ground than they are worth. I have decided to grow only what I want for my own eating." Turning to a small plot of ground on which were scattered small Turnips, evidently to be dug in, my friend remarked, "I sowed Turnips after the Potatoes were dug, and they have paid me ten times better than Brussels Sprouts would have done. Everybody's Turnips failed but mine ; I could have sold as many more, and I am sorry I did not sow the seed I have in the house. Why," he went on, never giving me the chance to speak, "I know the Potatoes to a row where Sprouts have been grown ; you would be surprised if I showed you the difference." He forgot I was a Brussels Sprouts grower, and he wound up by saying, "I will have no more of them, not more than a row or so." It was then my turn. "Are these the only reasons you have for not growing them?" "No," he replied, "you can get nothing for them when they are grown. I can make more ont of them by selling the plants at 2d. a score." This certainly seemed conclusive, but I was, and am, still firmly convinced that they are the most profitable crop that can be grown. Land planted exclusively with them will yield a better return than Potatoes will in most seasons. They certainly take a good deal more out of the soil, but if well and properly managed they pay for this and then leave a balance in their favour. Such, however, has been my experience, and if this was not the case I should not have nearly trebled the amount of land under this crop. The reason they do not pay my friend is because he is at too great a distance from a good market. Unfortunately for him, produce for miles round is rushed into moderate sized towns, and the consequence is the market is "glutted," and sometimes the returns do not cover the carriage. After all, my friend had grown a few last year and realised 8d. a stone for them, out of which he had to pay 2d. for carriage and commission, so that his returns were 6d. a stone clear.

Well might he say they did not pay for growing, and when I knew this I could thoroughly understand his clinging to the early Potato crop. Brussels Sprouts certainly would not be a paying crop at 6d. a stone, but for double that amount they would pay well.

Small growers are placed at great disadvantages, and if they attempted to send their produce to good markets at a distance it is very questionable if they would get even 6d. a stone returned, the whole would be swallowed up between commission, porterage, and railway rates. Not only so, but small odd lots are often sold for considerably less than the market value. I have known many instances of this, and those who send a regular supply of produce in moderate quantities fare the best, but those who can take their own produce and sell it have the best of the bargain. This would, and does not pay, those even in the neighbourhood of good markets unless they can take sufficient to more than compensate them for the time taken up in going to market. Fruit and vegetable growers residing some distance from a market would do well to unite in sending their produce, which would allow of their sending it away to markets where vegetables are in demand, with the result that all would profit by so doing. Not only should they unite for this purpose, but if they formed associations they might bring ample influence to bear upon the officials of the railway company that runs through their district to carry garden produce at reduced rates. Not only is this a question for the grower, but the consumer also should move as well in bringing this matter prominently forward. In the end the railway companies would gain largely by so doing, the consumer would benefit enormously, and the grower would be fairly remunerated for his labour. Landowners would also gain, for land that is now idle would soon be brought under cultivation and would yield a very fair return. Such a step might, and would, be the means of raising a cry for a reduction of rents for land in the neighbourhood of towns, but good land near good markets will always be worth sufficient rent per acre to make it a good investment, even if considerably less is paid for it than is the case at present.

I have said that the present state of things affects the consumer of vegetables enormously, and it may be well to examine the grounds for such a supposition. If we consider for a moment, my friends, Brussels Sprouts, last year, practically given away, and the lowest price they realised last season in good markets in the provinces—namely, 2s. a stone clear. The supply at this price was not equal to the demand, and higher prices were obtained, but it is as well to give the lowest. Now these were bought by greengrocers and sold by them, therefore readers can form their own idea what the consumer had to pay for them. Some might, and doubtless would, lose considerably by altered circumstances on the lines suggested, but I think it only right that the consumer should be able to obtain produce without having to pay exorbitant prices, as is often the case at present.

To return to our subject. Brussels Sprouts if well grown, and the strain good, are a certain crop. They are not half so liable to club as Broccoli, and are certain to brave without injury the severest of winters. When raised early they can be cleared from the ground in time for any other crop. The latest supplies can be cleared in time for a crop of French Beans ; in fact before it is wise to sow the main crop of these, two rows of Cos Lettuces may be planted, and the Beans sown between them after the middle of April. The latest Sprouts are best obtained from plants sown outside in a sheltered position the last week of March or during the first days of the following month. If plants from this sowing are planted out directly they are ready on well-worked and liberally manured land, they will become strong and prove very remunerative, especially if they are assisted with liquid manure after the Potatoes are dug. But if planting is delayed until dry weather in June or later, they will be a long time before they make progress ; in fact half the season will be gone before they are thoroughly established and growing freely, therefore the return is scarcely half what it otherwise would be. When late planting is practised the plants may be placed 15 inches instead of 18 inches apart in the row. Brussels Sprouts without doubt do best and pay best when the plants are raised early. They attain a greater length, and consequently yield at least a third more sprouts. This esteemed vegetable is in demand directly Peas and French Beans fail. The market supply of the former is generally of short duration in comparison with that obtained in private gardens by successional sowings. Beans are then demanded and followed by the Sprouts. Seed should not, however, be sown too early, the 1st of March being soon enough. When sown early in February there is some risk of failure from the plants commencing to flower during the early part of June, especially if dry weather sets in during May. Another cause of flowering or "bolting" is pricking the plants out of the seed boxes into other boxes or frames in light rich compost that induces a quick soft growth. Plants raised by such means are not to be relied upon. They may be as large again as plants raised on hardier principles by planting time, but the smaller sturdier plants in the end will surpass them. If the seed is sown in boxes the plants should be grown hardy until they are large enough for pricking into frames placed on the ordinary soil of the garden. Our plan is to sow in a frame and then draw out the largest plants and transplant them when large enough 2 inches apart in a sheltered position where they can have slight protection at first if cold severe weather follows transplanting.

Planting in the position in which they are to grow is commenced as the Potatoes receive their final earthing. The Potatoes are planted in shallow drills drawn out with a hoe made for the purpose, and then earthed-up directly they show, and the soil is well worked to destroy small weeds. If the weather is dry water is poured between the rows and the Sprouts placed in. A little water to start them prior to planting is all that is needed, for sturdy plants are soon established, and at this time of year are growing vigorously.

Small Sprouts are not the most profitable for the market, they take too much gathering and weigh too light. The Aigburth is one of the best. When gathering commences it is unwise to spoil the sample by mixing the loose Sprouts with those that are firm and compact. In the end it is the most satisfactory to gather these and sell them by themselves. Such "dodges" are too frequently practised, and only entail disappointment and loss on the buyer, while the grower adds to his reputation to such an extent that his produce is passed by for that of men who can be fully relied upon. —Marketer.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

Undoubtedly this, in our opinion, is one of the best, and best managed of charitable institutions in this country. It enjoys the patronage of the Queen and Prince of Wales, the Duke of Westminster is its President, and its Vice-Presidents include noblemen and gentlemen of distinction in the horticultural world, or in sympathy with the objects of the charity. Its stability is certified by the fact of upwards of £21,000 being invested in Consols, and is increasing yearly. It affords support to 126 pensioners ; gardeners whose term of labour is over, or widows of gardeners, who are thus provided with sustenance in their old age. The sum distributed in pensions last year amounted to £2124 10s., apart from the special distribution of £655, contributed mainly by gardeners commemorative of the fiftieth year of Her Majesty's reign, and which enabled £5 extra to be granted to each pensioner and to each unsuccessful candidate at the last election. Thus an enormous amount of good is being done by this Institution, but as remarked by the Chairman in his speech at the dinner referred to below, a great number of persons who derive a large amount of pleasure from their gardens are not yet enrolled as subscribers to the fund. Mr. Veitch also pointed out the sad fact that at the last election no less than fifteen candidates had to be excluded through the amount at disposal being exhausted.

In the election of persons to participate in the benefits of the Institution preference is given to subscribers for fifteen years, subject, however, to the rules bearing on an investigation of the claims of applicants. There are about 1100 subscribers of a guinea, but by no means all of them are gardeners, several nurserymen, seedsmen, and others contributing not for their own benefit, so that it would appear there are many who might at some time be glad to share in the advantages of the Institution that do not yet accord it support. Hundreds would willingly do so no doubt if they were able, but a large margin must remain of gardeners who could spare a guinea a year who have not yet seen their way to do so ; but several have collected 10 guineas, and in this way become life subscribers, and who at some time if necessity should arise may have preference in an election. The Gardeners' Royal Benevolent Institution deserves extended support both from the affluent who derive pleasure and benefit from gardens and from those who cultivate them, and if the latter should be so fortunate as not to need its assistance their satisfaction should be the greater in contributing to the support in the time of need of their less favoured fellow workers.

The anniversary festivals of the Institution rank among the events of the year in the horticultural world. The first of these gatherings was held in 1844, at which Mr. John Noble presided, and the last held at the "Albion," Aldersgate Street, London on the 4th inst., when a distinguished statesman and orator was expected to occupy the position of chairman. Illness prevented Mr. Chamberlain's attendance, and the disappointment was deeply felt. The President of the Royal Horticultural Society—Sir Trevor Lawrence, Bart. M.P.—kindly stepped into the breach and acquitted himself well. The room and approaches were beautifully decorated

with plants, and the tables were befittingly laden with flowers and fruit for the occasion.

THE DINNER.

Grace having been sung, the Chairman announced that he had received a letter and a subsequent telegram from Mr. Chamberlain, but he would refer to them later on. The Chairman next proposed "The Queen," and alluded in touching terms to the great sorrow Her Majesty had lately experienced. On the other hand, they all hoped that Her Majesty's grandson had before him a long, happy, prosperous, and useful career.

The Chairman then proposed the toast of "The Prince and Princess of Wales and the rest of the Royal Family," and remarked that, not only was His Royal Highness patron of the Institution, as was his illustrious father, but the Duke of Connaught not very long ago took the chair at one of their dinners. It was their hope that some member of the Royal Family might again occupy a similar position.

Mr. J. R. Bourne next proposed the "Navy, Army, and Reserve Forces," each service being responded to severally by Admiral Field, M.P., Major Bolton, and Major Gole.

The Chairman upon rising to propose the toast of the evening, "Success and Prosperity to the Gardeners' Royal Benevolent Institution," was received with loud cheers. He said he need hardly say what keen sense of disappointment he felt when he heard that the Right Hon. Joseph Chamberlain had been prevented by illness from being in the chair that evening. He had had the pleasure of listening to many speeches on many subjects from that gentleman, and he (the Chairman) was bound to say that whatever the occasion, and whatever the subject, Mr. Chamberlain had been always able to bring to the subject some new illustration, some new method of interesting his hearers in what he was speaking about, and something which recommended what he said to the judgment of those whom he was addressing. He had in his hand a letter from Mr. Chamberlain, and also a telegram, in which he said, "Thanks for kind expressions, I shall be happy to come some other night." He was sorry that the Committee of Management had not been able to find somebody who would have been more able to bring a little freshness to the toast. The objects of the Institution were well known to everyone, as well as its claims, but in looking through the list of subscribers, he was sorry to say that he found the names of a large number of friends of his own absent, who derived a large amount of pleasure from their gardens, and felt sure it had not been brought to their notice that they ought to subscribe to the Institution. The Institution did not do anything that was at all extravagant. What did it do? It simply gave to the men who were pensioners £20 a year, and to the women £16; surely it would be impossible to do less than that. It had got on its lists a very considerable number of gardeners, and he was glad to see that it was enabled to add to the comforts of their old age, and a considerable number of them. The average age of the pensioners he found was seventy-four, and their oldest pensioner was 100 years of age; therefore, gardening did not appear to be an unhealthy occupation. The number of applications was larger than the charity was able to help. The total expenditure was only £2250, and when he recollected the enormous interest which the people of this country took in gardening, he must say it was a reflection on the wealthier people of the country that they did not support the Institution more largely. The Institution had made it a rule to help those who helped themselves, and that preference was given to those who had been on the books of the Society fifteen clear years before any help was given to others. A lady had once asked him whether he thought an Orchid was more beautiful than a Rose. He thought the proper course to take in such a case was to show them the door at once, because he did not think they could take any interest in any form of gardening. It was quite possible to take an interest in a Rose and admire an Orchid at the same time. He had been successful in gaining a prize at a show for twelve Roses, and he had also gained one of the National Rose Society's gold medals, the only fault he had to find with which was it was so small he could hardly see it. He ventured to think that they ought to work the field of gardening, and the interest the people took in their gardens, more largely than was done, in the interests of the Society. Possibly at no period of the history of the Society was so much money spent upon gardening as now. Therefore he thought the Society should be brought under the notice of proprietors of gardens who spent large sums in getting pleasure out of their gardens. Gardeners often found themselves in a position of having very little for their declining years, and he could not believe that people who got enjoyment out of their gardens would not be prepared to provide for the maintenance of that admirable Institution. (Cheers.) He did not think that he need detain them any further, only to wish that his friend Mr. Chamberlain had been present. So far as he was personally concerned, he felt he should occupy the position very imperfectly. (No, no.) He coupled with the toast the names of Mr. John Lee, who had only missed one dinner out of forty-five, and Mr. H. J. Veitch.

Mr. John Lee, in response, thanked the company for the enthusiastic manner in which they had received his name, and went on to say that they owed a great debt of gratitude to the Chairman for having at a moment's notice consented to preside that evening, and to those gentlemen present for the generous support they had given to the Institution, as it was through their generosity that it had been raised to a high pitch of excellence, and had been placed on a solid basis, which he, and he knew they all, hoped it would maintain for many years to come.

Mr. Harry J. Veitch also responded, and having returned thanks for the hearty reception accorded him, alluded, as Treasurer, to the financial position of the Institution, which, he said, was managed as carefully as it was possible to manage any institution. He would again like to remind them that the interest on the money subscribed all went in benefiting their pensioners. They had no large buildings to keep up, and no expensive staff to maintain, but they were obliged to have a Secretary, whom they paid as little as possible. With that one exception, the whole of their money was devoted to the purpose for which it was given. They had 126 pensioners, but at present they had only one election a year; and at the last election they were obliged to omit fifteen unfortunate candidates for want of funds. That was a sad thing for either men or women, but one case was particularly sad, as in that instance the applicant lost by only nine votes after having secured 700. The present had times affected gardeners even more than most other servants, as they were the first to be discharged in times of scarcity. He knew of cases where gardeners had been out of employment for three and four years, and they were compelled to spend what little savings they had put by for old age. This Society tried to meet those cases, and he was bound to say they made the funds at their disposal go as far as they possibly could. (Hear, hear.) Unfortunately for the Society, they had lost 50 guineas a year by the conversion of the three per cent. Consols. That was not, however, the place for speaking politics, but he simply wished to allude to the fact. In conclusion, he said if they could only see the tears of joy in the eyes of recipients they would not fail to continue their liberal support to the Institution.

Dr. Masters proposed the health of the Chairman, who briefly responded, and then the Secretary, Mr. Cutler, made the gratifying announcement that the night's donations amounted to 1000 guineas. Their Chairman had given £10 10s., and Mr. Chamberlain's list amounted to £435, while quite £200 had been subscribed by garden rs in small sums. The Chairman then proposed the health of "our old friend, Mr. Cutler," who responded amid great applause. Mr. Tidswell then proposed "The Houses of Parliament," which was responded to by Mr. H. L. W. Lawson, M.P. The last toast was that of "The Honorary Officers," which was responded to by Mr. B. S. Williams.

There was a very large attendance, and the proceedings were rendered the more enjoyable by the admirable singing of the talented vocalists, under the direction of Miss Mary Belval, the accomplished daughter of the Secretary of the Institution.

Notes & Gleanings

EVENTS OF THE WEEK.—Besides the Rose shows announced on another page Exhibitions will be held at Winchester and Chiswick to-day (Thursday), the latter being likely to attract much interest owing to the competition for the challenge cup in the group classes. The principal event of the week will, however, be the Gardeners' Orphan Fund annual meeting and dinner at the "Cannon Street Hotel" on Friday, the 13th inst. The meeting takes place at 2 P.M., the ballot closing at 4 P.M., to be followed by the dinner at 5 P.M.

—— WE are pleased to observe, in the *Gardeners' Chronicle*, that DR. MAXWELL T. MASTERS has been presented with the insignia of Chevalier of the Order of Leopold by H.M. the King of the Belgians, the decoration, we presume, which attracted attention at the dinner of the Gardeners' Royal Benevolent Institution last week. Dr. Masters was Vice-President of the Jury of the International Exhibition of Ghent in April of the present year.

—— THE WEATHER.—Our Perthshire correspondent writes:—"We have as yet had no genuine summer weather. Previous to last week, which had been dull and showery, there was a good deal of bright sunshine, but easterly winds prevailed, with low temperature at night. On the morning of the 1st inst. Potatoes in this district were blackened by frost. Shortly before in many places Dahlias and other plants had suffered. Turnips have had in many parts of the country to be resown. Hay promises well, and cutting has begun. There is every prospect of a late harvest." There has been a continuance of rain in the south, broken only by fine summer-like weather on Sunday and subsequent days.

—— A WAKEFIELD correspondent says:—"The weather is very unsettled and cold for July, prevailing winds N. and N.E., the thermometer at 7 P.M. on Tuesday standing at 47°. As this is a fair sample of what our experience has been for some days it makes everything very late."

—— THE GARDENERS' ORPHAN FUND.—A reminder may be given that the first anniversary dinner, also election of children to the benefits of this Fund, will be held at the "Cannon Street Hotel," London, on Friday in this week, the time of the dinner being five o'clock. A good assemblage of nurserymen, gardeners, and others interested in the charity is expected, and persons who have not obtained tickets can, we believe, be supplied at the Hotel on Friday by Mr. Barron, the Hon. Secretary. Sir Julian Goldsmid, Bart., M.P., will preside on the occasion. It is hoped that all who can conveniently attend the dinner will do so in the interests of this young and excellent organisation. The paragraph in last week's issue in reference to the election was sent to us inadvertently, without the authority of the Committee. The simple rule is that every 5s. subscription gives one vote.

—— A CONFERENCE OF FRUIT GROWERS.—Arrangements have been in progress since May last for holding a conference of fruit growers in the Crystal Palace, Sydenham, on the occasion of the Fruit Show, September 7th and 8th next, and to carry out the scheme a large Committee has been formed, including about sixty of the leading nurserymen, gardeners, and market growers. A meeting of the Executive Committee was held in the Crystal Palace on Saturday the 7th inst., T. Francis Rivers, Esq., in the chair, and the general programme of the conference was decided upon. It is intended to deal exclusively with fruit culture from a profitable point of view, with special reference to Apples, Pears, and Plums, packing, carriage, and marketing, preserving fruit by drying, &c., and the dietetic value of food. The latter portion will probably be considered at the second day's meeting.

—— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of this Society was held at the "Caledonian Hotel," Robert Street, Adelphi Terrace, Strand, on Monday evening last, Mr. George Wheeler in the chair. Two new members were elected, making an addition of thirty-nine this year. The membership now stands at 291, including honorary members. The Committee are very pleased to state that the Society is in a healthy condition, no one being on the sick list at the present time. A copy of the rules will be sent to any address for six stamps, on application to the Secretary, Mr. W. Collins, 5, Martinhoe Terrace, Martindale Road, Balham, S.W.

—— WE regret to learn that the REV. WALTER SNEYD of Keele Hall, Newcastle, Staffs, died suddenly on Monday, July 2nd, having only been ailing a few days. Keele Hall Gardens are well known in the horticultural world, having been for some years under the charge of Mr. Wallis.

—— LOUTH ROSE SHOW.—We learn that Mr. A. James, of Ramsgate House, the Hon. Secretary of this undertaking, is sparing no efforts to make this Show a decided success. The event is fixed to take place at the Town Hall, Louth, on Wednesday, 25th inst., and in addition to the display of Roses there will be a musical promenade and a miscellaneous concert. Over £25 is offered in thirty-nine prizes. There are thirteen classes—namely, five open to all comers, three to the county of Lincoln, two to amateurs within a fifteen mile radius of Louth, two for lady competitors, and one for cottagers only. Intending exhibitors should obtain a schedule from the Secretary. The entries close on Monday, the 23rd July.

—— AT the WIMBLEDON SHOW last week, for which we have not space for a detailed report, plants of various kinds were admirably staged by Messrs. Alderman, Bentley, Chandler, Waite, Law, Ware, Methven, Hunt, Cresswell, Thornton, Newell, and Cole, good gardeners in the district, to whom prizes were awarded. Messrs. J. Laing & Son staged a splendid group of Begonias and Orchids. Vegetables of great excellence were staged by the skilful cultivator of them, Mr. J. Waite, of Esher, who secured the chief prizes offered both by the Society and Messrs. Sutton & Sons. Other prizewinners in the classes were Messrs. Cole, Bentley, Methven, Newell, Chandler, Law, Parsons, and Goodyear. The Show was admirably managed by Dr. George Walker and Mr. J. Lyne, and both they and the exhibitors deserved better weather—at least that was the opinion of the Judges, and from their decision there was no appeal after five o'clock, and this involved the payment of 5s. for the luxury, to be returned if sustained, to be retained if frivolous—not at all a bad arrangement. It is a pity a more complete report cannot be given of the Show, but it is useless struggling against the claims of the Roses at this time of the year. Fruit was very good, notably in the first prize collection from Mr. C. Gibson, who was first also with Grosse Mignonne Peaches and a superior Melon. Mr. Griffin had the best Grapes, and Mr. Alderman the best Strawberries, a fine dish of Unser Fritz.

—— GARDEN APPOINTMENT.—Mr. William Webber, late foreman at Lowther Castle, Penrith, has been appointed head gardener to Mrs. Seymour, Norton Hall, Daventry, Northamptonshire.

—— DICKSONS, LIMITED, CHESTER.—The above is now the title of the combined firms of Messrs. James & F. Dickson, the amalgamation dating from July 2nd. The firms have traded separately for about thirty-four years, but were formerly united. Mr. George Dickson is Managing Director and Chairman of the business, and Mr. E. J. Baillie the deputy Chairman. Messrs. W. A. Dickson, James Dickson, and John S. Dickson are also Directors of this great (family) Company of nursery and seedsmen.

—— MESSRS. OAKSHOTT & MILLARD in requesting an opinion of their new EARLY EIGHT-WEEKS ONION state:—"The seed from which these specimens were grown was sown exactly two months since, and they are two weeks earlier than Queen sown the same day." The bulbs are white and well formed, the largest 3½ inches in circumference, and the necks thin. The examples represent very quick growth. It belongs to the Silver-skinned section, the varieties of which are worth trying as winter Onions, sowing in August for early spring use.

—— SINCE the famous INTERNATIONAL HORTICULTURAL EXHIBITION, HELD AT COLOGNE in 1862, none has been projected on so large a scale, or promises to be of so important a character as the one to be opened there early in the ensuing month. Arrangements are proceeding rapidly under the direction of the Executive, presided over by the Consul-General for Austria-Hungary, Baron Oppenheim. They have appointed as Commissioner for the British section Mr. T. J. Wesley Bennett, F.R.S.L., F.C.A., of 61½, Fore Street, Moorgate, London, E.C., to whom all communications should be addressed with reference to that section.

—— CROYDON SHOW.—We are informed that the vegetables and salads shown by Wm. Jupp, gardener to Cuthbert Johnson, Esq., Waldrons, Croydon, at the Croydon Horticultural Society's Show, were given to the Croydon General Hospital. Messrs. J. Laing & Sons remind us that "no mention" was made of their group of Begonias, Orchids, &c., at this Show. It was a Wednesday's Show—the day on which we go to press, and only the leading Rose classes were reported. Even the prizewinners in other sections could not be mentioned, and note was not taken of them. Journalists cannot act independently of time and space, but do the best they can under the circumstances.

—— ESCALLONIA MACRANTHA.—Planted so that it is trained up a wall in almost any situation Escallonia macrantha is very handsome, or as a bush in the shrubbery it does equally well. For covering large rockeries it is capital. Its glossy deep green leaves form such a delightful contrast to its rich pink flowers, which are freely produced during the greater part of the summer if the old flower stems are cut off directly the first ones have faded, as new growth commences at once, which will again blossom. A fairly rich soil, to which some peat is added, suits this plant to perfection. Copious supplies of water during the summer when the position is a dry one benefits it greatly.—M.

—— TWENTY-SEVEN members of the EASTBOURNE HORTICULTURAL SOCIETY, accompanied by their President, the Mayor of that town, F. Bolton, Esq., made a special journey to Messrs. Cannell and Sons' Home of Flowers, Swanley, on Wednesday, the 4th inst. They were escorted through the several glass houses by Mr. H. Cannell, sen. Begonias, Fuchsias, Pelargoniums, Chrysanthemums, claiming much admiration, also other departments. A journey was then made to the Strawberry picking district, 50 acres in one piece causing astonishment. The large establishment of Mr. P. Ladds was also visited, where Grapes, Tomatoes, and Roses, together with the gigantic glass houses, astonished the whole party. At 6 P.M. the members started on their return journey, evidently delighted with the visit.

—— FROM Mr. J. Murphy comes this request for information:—"It may occasionally be desirable to chronicle failure—if only for variety—as well as success. For several years I have tried various methods of inducing IRIS SUSIANA to flower, and so far without success. I have planted it in the herbaceous border with some manure and leaf mould, and transferred it from that to a raised bed with a southern aspect, sub-

stituting a fractional part of peat and plenty of drainage. The plants are healthy, but will not bloom this year. If I remember correctly you published an instructive, as well as humorous, article on this subject from Mr. F. W. Burbidge, Trinity College Botanic Gardens, Dublin, last year, describing how an untutored 'gardener,' and I believe groom, flowered this Iris to perfection. I cannot place my hand on the number, but perhaps some correspondent would tell how success can be won, and the matter would interest others as well." [The note in question appeared on page 150, February 23rd, 1888.]

—— "W. J. M." writes :—"Abundance of bloom was produced on the majority of both trained and standard APPLE TREES, but the crops are not generally good. The caterpillars have greatly disfigured many trees, both foliage and fruit being much injured. Various small birds have done much towards clearing the trees of caterpillars, and in the case of all dwarf trees it has been found that the time expended in crushing caterpillars has been well spent. There are very heavy crops set on sheltered trees, and in the case of Lord Suffield, Hawthornden, Duchess of Oldenburgh, Tower of Glamis, King of the Pippins, Cox's Orange Pippin, Braddick's Nonpareil, Margil, and a few others thinning is necessary. The clusters being very thick one well formed fruit only should be left on each, the rest being cut away. They will well repay for this rather tedious labour, fine well formed fruit being of more value than four times the number of inferior samples."

—— AUTUMN-SOWN ONIONS.—"D., *Birmingham*," sends [the following note :—"Last year I sowed some White Spanish Onion seed in June, but the season was so hot and dry that many of them were even too small for pickling, so they were put into a box and forgotten, until they came under notice in April last. The bulbs were very small, none larger than a small Hazel nut, and were very much dried, but I put them into common garden soil scarcely manured at all just to see if they would grow. Every one grew, and I have bulbs 1½ inch in diameter. Some of your readers may have had experience in growing the ordinary summer sorts in this way (I do not mean the Tripolis), but it seems to be easy to grow larger roots than usual of the Spanish section especially, if the plan I have described were adopted, only bearing in mind that only very small bulbs could be used with safety as not likely to run to seed. In good soil and with a little attention I do not see why very large roots may not be grown."

—— NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.—The usual monthly meeting and Show in connection with the above Society was held in the Arboretum Rooms recently, when there was a large attendance of members and friends. There was on view a large and varied collection of plants, flowers, and fruit, for which money prizes were awarded. Amongst the principal exhibitors were Mr. C. J. Cox, of Basford, whose gardener, Mr. Meadows, put together a well-arranged group of plants, conspicuous amongst which were many finely coloured Crotons, Palms, Caladiums, &c. The principal money prize was awarded to this group. W. H. Farmer, Esq., of Alexandra Park (gardener, Mr. A. Hanborough) followed closely with a well-arranged collection of plants. The third in order of merit for groups fell to Mr. James Booth, of Mapperley Road (gardener, Mr. Ralphs), and contained many small but well-grown plants. Roses formed another leading feature. Mr. Foulgham, Hunger Hill, obtained first honours ; Mr. T. B. Hallam, St. Ann's Well Road, closely following with a very fine lot. Mr. E. Massey (gardener, Mr. Bateman) was a good third. Lieutenant-Colonel Seely, Sherwood Lodge, sent, through his gardener, Mr. Swanwick, a fine collection of seedling Gloxinias and two good Melons and Cucumbers. Hanging baskets of flowering plants were contributed by Mr. Honley, Nottingham ; and Mr. J. W. Lewis, The Park, sent some very good specimens of cut stove and greenhouse flowers. Messrs. J. R. Pearson & Sons, Chilwell, had fine examples of the celebrated Cucumber Long Gun, and Mr. Johnson, of St. Ann's Road, exhibited a small collection of vegetables.

—— ROYAL BOTANIC SOCIETY'S EVENING FETE.—The following is the list of prizewinners at the successful fête held in the Botanic Gardens, Regent's Park, on July 4th :—Division 1, natural flowers, fruit, &c.—Floral decorations for a dinner table : First, Mr. W. L. Buster ; second, Messrs. W. G. & P. Phillips ; third, Mr. J. R. Chard. Floral decorations for table dressed for dessert.—First, Messrs. Hooper and Co. ; second, Messrs. W. P. & G. Phillips ; third, Mrs. E. Spurling. Foliage and flowers, for a sideboard.—First, Mr. W. Gardener ; second, Mrs. Henderson ; third, Mrs. E. Bengafield. Small group of growing plants for table.—First, Miss A. Gardiner ; second, Mr. J. Prewett ; third, Mr. J. W. Chard. Groups of plants for a recess, alcove, or fireplace.—First, Mr. J. R. Chard ; second, Mr. R. Scott ; third, Miss A. M. Williams. Standing basket, vase, &c., with plants.—First, Messrs. Henry & Co.; second, Mr. C. Handley ; third, Miss A. M. Williams. Hanging basket, with growing plants.—First, Mr. R. Scott ; second, Mr. J. R. Chard ; third, Messrs. Hooper & Co. Window box of plants. —Third, Mr. C. Handley. Bridal bouquet.—First, Mr. W. Gordon ; second, Mr. J. R. Chard ; third, Mr. J. Prewett. Ballroom bouquet.—First, Mr. W. Gordon ; second, Mr. A. F. Youens ; third, Miss Gertrude Paget. Group of flowers, &c., stalks in water.—First, Mr. A. F. Youens ; second, Mr. H. O. Garford ; third, Mr. F. Perkins. Flowers which expand only at night.—No exhibits. Arrangements of flowers, leaves, &c., for personal adornment. — Small silver medal, Messrs. Perkins & Son ; large bronze medal, Mrs. Gray ; bronze medal, Miss Alice Gardiner. Miscellaneous. – Large silver medal to Messrs. W. Paul & Son and Messrs. W. P. & G. Phillips ; silver medal to Messrs. Hugh Low & Co., Mr. C. Turner, and M. Smout ; small silver medal to Messrs. Barr & Sons. Division 2, works of Art :—Paintings, drawings, and carvings.—Small silver medals to Miss C. E. Lohr and Mr. W. Aumonier ; large bronze medals to Miss B. Maguire, Mrs. Southam, and Miss A. Bell ; bronze medal to Miss Emily Cook ; small bronze medal to Mr. A. G. Hawes, Miss H. M. Green, Miss C. L. Barton, Mr. Youens, and Miss L. Aumonier. Artificial flowers.—For personal adornment, small silver medal to Messrs. J. Shoolbred & Co. ; for table decoration, bronze medal to Messrs. J. Shoolbred & Co. ; for a model of Taraxacum officinale (Dandelion), certificate of merit to Messrs. J. Shoolbred and Co. Some remarks on the more important of these classes will be found on page 17. We are informed that Mr. J. R. Chard of Stoke Newington had the honour of presenting one of his bouquets to the Duke of Teck during the evening.

ROYAL HORTICULTURAL SOCIETY.

JULY 11TH.

THE Drill Hall at James Street, Westminster, was filled at the meeting on Tuesday with groups of plants and flowers of a varied character, Roses, Delphiniums, Gaillardias, Tuberous Begonias, and hardy plants forming the specialties.

FRUIT COMMITTEE.—In consequence of the meeting of the Committee at Chiswick on Monday only a few members attended on the present occasion. Those present were H. J. Veitch, Esq., in the chair, and R. D. Blackmore. J. Wright, J. Roberts, P. Crowley, and J. Willard. Messrs. W. Lovell & Son, Driffield, sent dishes of Vicomtesse Herieart de Thury and La Grosse Suerée Strawberries for comparing their flavours ; the first-named was considered the better. These, with King of the Earlies, it was stated, are the only varieties yet ripe in Yorkshire. A vote of thanks was accorded. Mr. W. Palmer, The Gardens, Thames Ditton House, sent his new Melon, Thames Ditton Hero, a fine-looking fruit, and of very good quality ; also a small crimson Tomato, early, and of good quality, but neither of these was considered to be in the high condition necessary for receiving certificates.

Messrs. James Veitch & Sons sent an interesting collection of Peas in twenty-two varieties. The plants had been pulled up and were suspended in bunches, so that their heights and productiveness could be seen ; a card was also attached to each variety showing the dates when the Peas were ready for gathering. Veitch's Extra Early, Dr. Hogg, and Emerald Gem were ready June 27th ; William the First and Chelsea Gem, ready June 28th ; American Wonder, Little Gem, William Hurst, and Kentish Invicta, ready June 29th ; Laxton's Alpha, June 30th ; Dickson's First and Best, July 1st ; Blue Beauty, July 4th ; Day's Early Sunrise, July 6th ; The Duchess, Essex Rival, Auvergne, Telephone and Telegraph, July 7th ; Advancer and Early Paragon, July 9th. A cultural commendation and vote of thanks were awarded, and the Committee considered Chelsea Gem very meritorious as a dwarf variety, height about 18 inches, and Dr. Hogg noteworthy for its earliness and good quality, height about 3 feet. A basket of the very early and useful Early Erfurt Cauliflower was sent from the Society's Garden at Chiswick.

On the preceding day a meeting was held in the Council Room at Chiswick, at which there were present—T. Francis Rivers, Esq., in the chair, and Messrs. Phillip Crowley, John Lee, J. Wright, J. Burnett, J. Willard, Charles Howe, J. Smith, J. Cheal, T. J. Saltmarsh, and W. Warren.

CABBAGES.—The varieties under trial were first examined, with the result that two of them were certificated ; one a new, the other a well proved early sort, and the fact that it wears so well renders it the more worthy of the distinction. This is *Ellam's Early* (Veitch) the dwarfest, most compact, and with one exception the earliest in the collection. The other variety honoured is not inappropriately named *Express* (Vilmorin). It is a selection from the Early Etampes, a serviceable and excellent variety. Express is a dwarf grower, forming

hearts as early as Ellam's, but of twice or thrice the size, and is distinct in character from all others on trial. A few others that met the approval of the Committee were Myatt's Early Market (Watkins & Simpson), a true stock of what appears to be a hardy variety, for the rows were full and the plants uniform. The hearts are above medium size, firm, and well formed. It is fairly early, and a good serviceable Cabbage. Early Rainham, both from Messrs. Hurst & Bunyard, is somewhat similar in character, and a good market variety. Bailey's Early (Veitch) was approved by the Committee as a good second early garden Cabbage for succeeding such as Ellam's. It is below medium size, with conical hearts fresh and tender in appearance; of the same type and good, though perhaps a trifle larger and earlier, are Heartwell and Cocoa Nut. A full report of the trial will presumably be prepared in due course.

STRAWBERRIES.—These, of which there is very large collection, were next inspected. The rains have injured the fruits and impaired the flavour somewhat, yet some varieties were fine and of good quality. Certificates were granted to *King of the Earlies* and *Noble*, the former having medium sized fruits of rich flavour, the latter early and handsome, but not superior in quality. Certificates were also adjudged to two other varieties—one of them, *Lucas*, being an old favourite with many cultivators who know its worth; the other, not very new but much less known, *Countess*. Both these are good growers and bearers, the fruit of the former very large, mostly round, dark in colour and good in flavour; those of the latter (Countess) also large, but lighter in colour and mostly wedge or cockscomb shaped, and of superior quality.

Dr. Morére is a round, large, well flavoured Strawberry, but the plants not very vigorous. Duchess of Edinburgh good in size and flavour, but plants weak. Souvenir de Kieff, a free grower and bearer of good fruit both in size and quality. Sir Harry is the best of the "good old Keens' Seedling" type. For producing very large fruits for exhibition Waterloo and James Veitch are pre-eminent, the former very dark in colour, but plants weak, those of the latter being more vigorous and productive. In addition to the varieties named, Vicomtesse Hericart de Thury, Sir Joseph Paxton, President, and Sir Charles Napier hold their positions for general usefulness.

EARLY PEAS.—Several varieties of Peas are on trial, but the majority are not yet ready for use. Among the white round-seeded varieties it is a neck-and-neck race between Carter's Lightning and Veitch's Selected Early, the former being perhaps slightly taller, and both productive. Running these closely in earliness are the blue-seeded Horsford's Free-trade and Canary Bird, which are apparently good stocks of Invicta. William I. and Dr. Hogg are in practically at the same time as the two preceding, and are larger, also probably better in quality; the last named being especially sweet, and, obtained true, is one of the best early Peas in general cultivation. We have now to note a distinct step in advance in Mr. Laxton's new Pea, Gradus, which is not yet in general cultivation. This is ready with William I., but has pods and peas like those of Telegraph; indeed, Dwarf Early Telegraph is a good popular designation. It is a white wrinkled Marrow, growing 3 feet high. Gradus, as compared with other early varieties, is by far the finest, and Mr. Laxton must be congratulated on its production. It was certificated last year, and no Pea has better deserved the honour accorded.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. Shirley Hibberd, W. Holmes, R. Dean, H. Herbst, J. Walker, J. Laing, T. Baines, C. Noble, B. Wynne, J. Dominy, H. M. Pollett, J. O'Brien, A. J. Lendy, W. Goldring, E. Hill, and G. Nicholson.

From the Royal Gardens, Kew, came a group of an extremely interesting character, comprising many rare and beautiful plants, of which the following select few may be noted:—Primula mollis, very distinct, with soft cordate leaves and numerous rosy purple flowers; Wahlenbergia saxicola, having small bell-shaped blush white flowers; Erythræa diffusa, dwarf and free, bearing numbers of small rosy flowers; Erpetion reniforme, a New Zealand plant, bearing pretty Violet-like flowers, purple, tipped with white; Isoloma hirsuta, a showy Gesneraceous plant, with hairy leaves and bright red tubular flowers; Begonia Haageana, a remarkable plant, the leaves large, and something after the style of B. metallica, but lighter, the flowers of great size, with broad pink and white petals, and in dense drooping clusters. The Nymphæas, hybrid Streptocarpus and Lissochilus Krebsi have been previously described. T. B. Haywood, Esq., Woodhatch Lodge, Reigate (gardener, Mr. Ridout), was awarded a silver Banksian medal for a large collection of beautifully fresh Rose blooms and several boxes of Odontoglossum crispum varieties. G. F. Wilson, Esq., Weybridge, exhibited a stem of Lilium Szovitzianum, 7 feet high, and bearing eight fine flowers, pale clear yellow, and a few dark dots (vote of thanks). L. Hansoni was also shown. C. J. Grahame, Esq., Croydon, showed a box of excellent Rose blooms and fine flowers of Lilium Krameri (votes of thanks). F. G. Tautz, Esq., Hammersmith (gardener, Mr. Cowley), exhibited Cattleya Gaskelliana superba and alba, both fine varieties; also Cypripedium Wallisi, now described to be a variety of C. caudatum, and Dendrobium hercoglossum, having a profusion of small soft mauve flowers, a white lip, and a black tipped column. G. Firth, Esq., Manningham Thorpe, Bradford, was awarded a cultural commendation for a strong plant of Grammatophyllum Ellisi with two racemes of twenty to thirty flowers each. Messrs. Sander & Co., St. Albans, exhibited a plant of Lælia Eyermanni described as a supposed natural hybrid between L. autumnalis and L. majalis, but it did not obtain an award. Dr. Sankey, Boreatton Park, Shrewsbury (gardener, Mr. Eckford), showed several fine Pansies and Sweet Peas, which were highly commended, and well grown plants of Orchis foliosa were sent from Chiswick.

Messrs. J. Veitch & Sons, Chelsea, exhibited a number of plants in pots of Clethra alnifolia, a hardy shrub with long spikes of white flowers and graceful habit. It seems well fitted for culture in pots, and a cultural commendation was awarded for it. The dwarf white-flowered Pratia angulata, the bell-like Zenobia speciosa, a collection of Rhododendron and early Gladiolus flowers, from the brightest scarlet to the most delicate blush tints and pure white. Several certificates were awarded for other plants, and amongst them was the remarkable Ostrowskya magnifica described below. Messrs. W. Paul & Son, Waltham Cross, had a small but choice collection of new Roses, including fine rich blooms of Grand Mogul, the Duchess of Albany, one of the La France type but darker in colour, and pretty white Moss Rose Little Pearl (vote of thanks.) Mr. J. Walker, Thame, showed boxes of Sweet Williams, garden Roses, Sweet Peas, and Dutch Honeysuckle (vote of thanks).

Of the larger groups very noteworthy were the Delphiniums, Gaillardias, and Amaryllises from Messrs. Kelway & Son, Langport, Somerset; the effective collection of hardy flowers, comprising Iceland Poppies, Delphiniums, Lilies, Pansies, &c., from Mr. T. S. Ware, Tottenham, and the interesting group of hardy plants and shrubs from Messrs. Paul & Son, Cheshunt, for all of which silver Banksian medals were awarded. Bronze medals were also accorded to Messrs. Laing & Sons, Forest Hill, for a brilliant selection of single and double Tuberous Begonias; to Messrs. Keynes, Williams & Co., Salisbury, for a handsome collection of Roses; and to Mr. T. B. May, Edmonton, for a beautiful group of Ferns.

Messrs. J. Laing & Co. offered prizes for Tuberous Begonias at this meeting, which were won by the following competitors:—Six single varieties.—First, Sir Edward Saunders, Fairlawn, Parkside, Wimbledon (gardener, Mr. Newell), with substantial bushy specimens bearing large flowers. Mr. A. Wright, The Gardens, Devonhurst, Chiswick, was second with good plants; and M. Hodgson, Esq., Shirley Cottage, Croydon, was third. The last named was, however, first with three double varieties, followed by Mr. A. Wright.

CERTIFICATED PLANTS.

Ostrowskya magnifica (J. Veitch & Sons).—An interesting herbaceous perennial, a native of Central Asia, and received in this country from Max Leichtlin of Baden, this being said to be the first time it has flowered in England. It is like a gigantic Campanula, in the style of C. macrostyla, the flowers shallow, bell-shaped, 6 inches in diameter, with eight roundish lobes, the colour being a soft mauve with a slightly darker veining. The stems are strong, with the oblong leaves arranged in fours. It is described as perfectly hardy.

Escallonia philippiana (J. Veitch & Sons).—A neat, dwarf, compact shrub, with small dark green shining leaves, and numerous small white flowers scattered freely over the branches.

Rhododendron Souvenir de J. H. Mangles (J. Veitch & Sons).—One of the "greenhouse hybrid" section, having bold salmon-red flowers, the mouth of the tube purplish, the lobes broad and round.

Allium pedemontanum (T. S. Ware).—An attractive Allium certificated under this name was thought by some to be A. narcissiflorum, but the Committee adopted the name given above. It has large rosy-purple bell-shaped drooping flowers in small umbels on short stout stems, quite distinct from the majority of the family.

Gymnogramma Pearcei robusta (J. Veitch & Sons).—A compact variety with most elegantly divided fronds, the ultimate divisions linear and bright green, contrasting with the dark stripes, which is slightly powdered like others of the genus.

Pteris tremula elegans (H. B. May).—A variety with the fronds much crested and cut, graceful in habit, bright green, and useful for decoration.

Prunus domestica variegata (Paul & Son).—Distinguished by the neat leaves being broadly margined with gold in contrast with a bright green centre.

Delphinium Ustane (Kelway).—Single, flowers large, pale blue, with a metallic gloss on the inner surface.

Delphinium Prince of Naples (Kelway).—A bold variety with large purple blue flowers, the spike tall and massive.

Carnation Germania (Hooper & Co.).—An excellent pure pale yellow variety, the flowers of good shape and moderate size, capitally adapted for cutting.

Cælogyne Sanderiana (Baron F. de Rothschild).—Flowers white, except the lip, which is yellow in the centre, the general form suggestive of C. ocellata. Racemes long and slightly drooping.

Carpenteria californica (Miss Jekyll).—A handsome shrub related to the Philadelphus, but having much larger pure white flowers of five broad petals, and a dense cluster of numerous stamens tipped with large bright yellow anthers, in the centre.

COUNCIL AND GENERAL MEETING.—At the meeting held in the Council Room, Victoria Street, Sir Trevor Lawrence Bart., M.P., in the chair, twelve candidates were duly elected Fellows of the Society. In accordance with the bylaws, all Fellows elected after July 1st pay half the current year's subscription.

In consequence of the great success of the last Apple and Pear Conference, and in order to correct and bring up the reports then published to date, the Council of the Royal Horticultural Society have decided to hold another Apple and Pear Conference at their Gardens, Chiswick, from the 11th to the 18th of October next. Anyone desiring

information in reference thereto are requested to communicate with Mr. A. F. Barron, Superintendent, R.H.S. Gardens, Chiswick.

PRIMULA ROTUNDIFOLIA.

SINCE the advent of Primula rosea, which is one of the most charming of early spring flowers, none of the many species introduced from the Himalayas can be compared with the subject of our note, and for which we venture to predict a great future. The accompanying sketch was taken from a plant which flowered in the herbaceous grounds at Kew in April and May of this year, and it is the only figure since Wallich's time, the original being in his "Tentamen Floræ Nepalensis Illustratæ," fig. 32 (uncoloured). The plants flowered at Kew were small, but the size and distinct colour of the flowers, together with the two or three sets of whorls produced, give great promise of something unusual when the plants are fairly developed. It appears to be quite as



FIG. 3.—PRIMULA ROTUNDIFOLIA (REDUCED).

hardy as P. rosea, with a similar habit, and requiring much the same kind of treatment. The leaves, as in P. rosea, are deciduous, dying off in winter, forming a small compact sulphury white bud, which may be easily protected from the ravages of birds and insects with a few small pebbles or a handful of cocoa-nut fibre. The leaves are orbicular, cordate, crenately toothed, bright green above, and entirely covered with meal on the under side, somewhat resembling P. Stuarti or purpurea (of Royle); the stalk 4 to 12 inches long, and the blade 3 to 4 inches in diameter. The flower stem grows from 6 inches to a foot in height, with two and often three whorls of bright rosy red flowers as large as those of rosea, with a pale yellow ring round the throat. So far as our experience at present goes it will grow as readily as the hardy P. rosea, all the capsules being large and promising plenty of seeds. It is found on the Singalelah range from 12 to 18,000 feet above sea level, and from Kashmir to Sikkim. (Syn., P. odontophylla, *Wall. Cat.*, 7016).—D.

TWICKENHAM SHOW.

JULY 10TH.

ONE of the most satisfactory Exhibitions held by the Twickenham Horticultural and Cottage Garden Society since its establishment nineteen years ago, was that which attracted so many competitors and visitors to the Orleans House Gardens on Tuesday last, very pleasing evidence of a strong local interest in a district of historical fame for its gardens and gardeners. Seventy-nine classes were provided for plants, flowers, floral decorations, fruit, vegetables, and cottagers' productions, the entries, with very few exceptions, being far more numerous than is general in suburban shows. In some classes where only two prizes were offered there were from eight to twelve competitors, and in the cottagers' classes the entries were even more numerous. The result was that four large tents were filled, one with plants and fruit, another with groups, a third with floral decorations, and the last with the cottagers' exhibits. In addition there were non-competing groups and cut flowers of considerable interest, including excellent Roses from Messrs. W. Paul & Son and Messrs. J. Veitch & Sons, miscellaneous cut flowers from Mr. Poupart and other growers in the district. The supporters of the Society, the Committee, and their popular Hon. Secretary, Mr. J. J. G. Pugh, who works assiduously and well in its behalf, with Mr. Bates and the widely known horticultural amateur, H. Little, Esq., as chairman, have ample reason to be satisfied with the result of their efforts.

Only a brief notice can be given of the exhibits, for to describe them as they merit would occupy too much space in such a show-crowded issue as the present one. In the first tent a group of Orchids from Mr. H. Little (gardener, Mr. Hill), not in competition, included several fine specimens and varieties from the large collection at The Barons, the same exhibitor winning the first prize for six Orchids, easily defeating Mr. H. James of Norwood. T. Twining, Esq. (gardener, Mr. J. Parsons), had the best six fine-foliage plants in the class provided by Messrs. Hooper & Co., Latania borbonica and Dracænas Shepherdi being conspicuous specimens. E. J. D. Paul, Esq. (gardener, Mr. Munro), was a close second, an excellent Adiantum constitutiug his finest plant. For six greenhouse plants Mr. H. James won the premier prize by a few points gained on two well flowered Heaths; Mr. Munro's second six comprised a handsome globular Gloriosa superba. Mr. Hill was also first with Tuberous Begonias, handsome bushy specimens of fine varieties.

The groups were of exceptional interest, particularly in the class for an arrangement of plants on the turf in a space not exceeding 100 square feet. Three of the four groups entered possessed uncommon merit, but there was little difficulty in selecting the first staged by Messrs. Hooper & Co., and arranged by Mr. Bruckhaus in his most graceful style. Concerning the other two there was some little discussion, but Mr. H. Fordham was ultimately placed second for a group distinguished by its brightness and effectiveness, though rather thin at the back, Mr. Filsell being third with an admirably tasteful arrangement but deficient in colour. The stands of flower baskets of Roses, bouquets, buttonholes, sprays, &c., were exceedingly tasteful in the majority of cases, and the number of competitors rendered the Judges' duties somewhat difficult. Very rarely is such even merit seen in these exhibits, which are chiefly from ladies in the district. With cut Roses J. P. Kitchen, Esq., J. Bateman, Esq., and Mrs. Rust secured the leading prizes.

Fruit was well represented, and the Committee might safely add a third prize to most of these classes. Sir G. Russell, M.P. (gardener, Mr. W. Allan), was first with a collection of six dishes of fruit, including good Black Hamburgh and Foster's Seedling Grapes, Peaches, Nectarines, and Strawberries. Mr. C. J. Waite followed. Black Grapes were shown by eight competitors, Mr. W. Allan leading with three even well-coloured bunches of Black Hamburgh; and Messrs. H. & E. Wells (gardener Mr. T. Thompson) were second for fine bunches and berries of Madresfield Court, wanting a little more colour. For white Grapes H. Labouchere, Esq., M.P. (gardener, Mr. Fitzwater) won first honours for handsome bunches of Muscat of Alexandria; Mr. Allan following with large bunches of Foster's Seedling. Mr. Allan was first with Peaches, and Mr. Otto Hiehle with Nectarines, both fine fruits. Melons, Strawberries, Tomatoes, and Cucumbers were also represented by good specimens. Vegetables from Messrs. Waite, Coomb, and Garrod secured the prizes for a collection in that order.



BRITISH ORCHIDS.

IN the Journal of August 19th, 1886, appears an interesting communication under the above title, in which the writer, "B.," in referring to O. maculata, says:—"The colour of this species varies from nearly white to crimson." It would be interesting to know if one has been met with hitherto pure white. In this part of Somersetshire the species is very plentiful. I have enjoyed many pleasant rambles in search of them, and have found hundreds of all shades, as stated by "B.," from nearly white to crimson; and it was not until a week ago that I found what I think may be termed pure white, not a washed-out colour, but a snow-like spike in a setting of emerald green. A most rigid search in places where the coloured kinds grow by scores has not resulted in the discovery of its fellow. I send you the flower, so that, although it is past its best, you may be able to form some opinion of the purity of the flowers.—W. H. MORTON, *Shepton Mallet.*

[We have some like it, but flowers so pure are not plentiful.]

EPIDENDRUM ATRO PURPUREUM VAR. RANDI.

PLANTS of an Orchid under the above name were shown at the Drill Hall on June 26th last as E. Randi both by Sir Trevor Lawrence and Mr. F. G. Tautz, but the Committee determined it to be a variety of E. atro-purpureum, though flowers of the latter brought by the gardener, Mr. Cowley, for contrast were very

distinct in form as well as colour. The variety has light brownish lanceolate spreading sepals and petals slightly undulated at the margin, which is of a paler colour. The lip is 1 inch broad, white, with two broad expanded lateral lobes, the centre one rounded, streaked with crimson in the centre, a few similar streaks also being noticeable at the base of the lateral lobes, partly concealed by the broad flat column. The plant shown had a raceme of seven flowers, each over 2 inches in diameter, long narrow dark green leaves, and small conical pseudo-bulbs. The flowers of the form regarded as a typical E. atro-purpureum had deep brown narrow sepals and petals, a soft rosy crimson lip with a darker centre, and two small lateral lobes enclosing the column.

Mr. B. S. Williams thus describes E. atro-purpureum :—"A very beautiful evergreen species, of free-flowering habit, with ovate or obpyriform rugose pseudo-bulbs, bearing two ligulate-oblong leaves, and terminal erect peduncles, with well furnished



FIG. 4.—EPIDENDRUM ATRO-PURPUREUM VAR. RANDII

racemes of handsome flowers. The cuneate-oblong sepals and petals, incurved at the tips, are green at the base, brown above; the three-lobed lip large, pure white, with a feathered crimson blotch at the base of the roundish flabelliform deeply notched front portion. It blooms in April and May, and lasts five weeks in good condition if the flowers are kept free from damp." He also mentions a variety named roseum with dark rose-coloured lips, which with the forms is a native of Guatemala, New Grenada, and adjoining districts in South America.

PELARGONIUM CUTTINGS.

THE present is a good time to take Pelargonium cuttings where strong early flowering plants are desired next season. Late-struck plants never make such headway early in the season as those do which are rooted early in the season. Cuttings 3 inches long and short-jointed which have not produced flowers are the best to select. Insert them, five or six, in a 3-inch pot, using half loam, leaf soil, and a liberal addition of coarse silver sand. Make the cuttings firm in the soil, giving a gentle watering. Place the pots in a temperature of say 70°, provide light shade to prevent the leaves flagging. We usually strike ours in a small span-roofed house used for small Crotons. By standing the pots containing the cuttings among the Crotons sufficient shade is obtained by the cuttings, and the daily syringings which the Crotons receive are beneficial to the Pelargoniums. If the stock of any particular variety of Pelargonium is small, and it is wished to increase it rapidly the shoots may be cut into short lengths, one leaf to a joint, fixed firmly into sandy soil in boxes or pans, watered, placed in a cold frame and shaded from bright sun. Most of the cuttings so treated will strike and grow quickly into stout little plants ready for potting with the ordinary stock of plants.—E.

LONDON'S LESSER OPEN SPACES — THEIR TREES AND PLANTS.

NEW SERIES.—No. 8.

AMONGST the millions who people our metropolis I am glad to know many readers of this Journal are to be found, and it is therefore of interest to note the change being brought about by the proceedings of the Public Gardens Association, the Kyrle Society, and some local bodies. The cultivation as gardens of numerous hitherto waste or barren patches of land about London is greatly stimulating the pursuit of horticulture in the homes of those folks who are the frequent visitors to these open spaces. They admire and observe, then set to work in their own small domains, and often manage to obtain for them, by gift or purchase, plants and flowers similar to those which have been brought under their notice. Just now some districts of the extensive parish of Lambeth are appealing for more open spaces, pointing out how rich in recreation grounds the folks are on the Middlesex side of the Thames. There is certainly a part of Lambeth, which, though it presents a Pleasant Row, a Paradise Street, a Walnut Tree Walk, and a Hop Garden, is far too crowded with poor habitations. Yet when we get into Kennington, at no great distance, we find quiet nooks which have escaped the influence of the town. Here are gardens where Roses may be cut, and the Camellia, once the pride of adjacent Vauxhall, still blooms, where by favour of the cats and sparrows Peas may be raised, and the Tomato grows in the open air.

It is well whenever possible to open freely to all such smaller spaces as are easy of access, even though parks and commons may be at no very great distance off, because they have special advantages. An example of what may be done in utilising an unlikely spot is to be seen in the garden just opened at Red Cross Street, Southwark, where every effort has been made to give it a green, flowery, and cheerful look; there is indeed, as advertisers say, both "land and water scenery." In the case of some shrubs and plants it must be doubtful whether they will thrive in that air, but the fittest will survive, and new specimens can be introduced. Nelson Square, Blackfriars Road, an open space known to few non-residents, is another that should be turned to account. It has several large Poplars and Scotch Elms, and more Hawthorns than usually occur in London squares. Perhaps at present it is rather too tree-shaded, and only such common cockney flowers as Thrift, London Pride, Irises, and Marigolds succeed in its borders. Several fine specimens of the Guelder Rose testify to the old liking for this flower, and there is a Mulberry, a tree rarely to be met with about London now. I have wondered sometimes why this has so gone out of cultivation, since the suburbs once positively swarmed with Mulberries, and I do not think it at all objects to the soil of the metropolis. Oldys, in 1753, saw immense Mulberries at Lambeth. He reckoned the shadow of one extended over 40 square yards. Might it not be well for our nurserymen to plant more Mulberries, as some think there is an opening for a remunerative silk production in England?

Passing on to St. Mary's and Walcot Squares in the Kennington Road, we discover a fragment of the old St. George's Fields, formerly an almost treeless expanse, where ponds offered the opportunity for the favourite game of duck-hunting, and the grass, stunted in some parts, was rank and thick in others. There are now plenty of trees scattered amongst the houses which stand on what was St. George's Fields. The moist character of the under soil appears in the fact that Willows, Poplars, and Ashes specially flourish. Both these squares, which are not of large size, are at present covered with grass, but they might be formed into pleasant gardens for the crowded neighbourhood. Walcot Square has its Ash, Plane, and Poplar trees, which give it a shady aspect; its companion square is almost open, having only a few shrubs on its sides. I have noticed that in converting these neglected squares into good gardens, it is really necessary not merely to break up but to clear away the stratum which has accumulated in course of years, when plants we should not expect to see come up occasionally from the earth below.

Here I cannot omit mention of William Curtis, pioneer of botanical progress, who, in 1777, took a piece of ground in St. George's Fields, with a view to show living specimens of every British plant he could obtain himself or procure through friends. He was helped by Daines Barrington, and White, his plants being arranged methodically, and clearly labelled in Latin and English. To this collection he then added another of such hardy exotics as were useful as food, medicine, or in the arts. But though he charged only a small entrance fee, the public did not vouchsafe support, so his scheme had to be given up. I thought of Curtis as I surveyed the border of Kennington Park,

near South Street, for there is a little plot of land that offers a veritable *rus in urbe*. Apparently this strip is no proper portion of the park, and so it has been left pretty much to Nature, except the planting of a line of evergreens, probably done when the park was formed. Some large but loosely grown examples of the Box, the Rhododendron (this will not flower as a rule so near London), the Portugal Laurel, the Evergreen Oak, and a species of Euonymus, and running amongst these were such creepers as the common Clematis, the wild Convolvulus, and the Goose Grass (Galium aparine). Rising above the grass which filled up most of the space around the shrubs were a variety of native plants, indicating what Kennington Common may have yielded to the herbalists of the olden time. Tallest, perhaps, was the Black Knapweed (Centaurea nigra), by which, and a neighbouring Thistle (Carduus arvensis) the sparrows seemed to be attracted. Nearly as conspicuous were the crimson tops of the familiar Sorrel (Rumex acetosa), and spreading heads of the Yarrow (Achillea millefolium). The prevalence of moisture was shown by a clump of Rushes, and there were Trefoil, the Hedge Mustard, and Hedge Garlic, the wild Chamomile, the Bitter Vetch, and other species, but there is no modern Curtis to label them for the public benefit, and a high fence renders specimen-picking difficult. Kennington Park itself is a space of about 17 acres, calling for no special remark, and having an unattractive aspect.—J. R. S. C.



ROSE SHOWS IN 1888.

July 12th.—Birmingham, Carlton-in-Lindrick, and Winchester.
„ 14th.—Eltham, Manchester, and New Brighton.
„ 16th.—Christleton and Newcastle-under-Lyme.
„ 17th.—Leek and Ulverstone.
„ 18th.—Birkenhead.
„ 19th.—Helensburgh.
„ 20th.—Darlington (National Rose Society).
„ 24th.—Tibshelf.
„ 25th.—Louth.

The above list of Rose show fixtures is the last I propose issuing this season.—Edward Mawley, *Rosebank, Berkhamsted, Herts.*

ROSES AT GUNNERSBURY PARK.

Now so much is seen of exhibition Roses, it is a pleasant change to meet with old favourites of bygone days. Several of them are grown in large masses, and others are arched over flower beds. Chénédolé, Baronne Prevost, Maiden's Blush, Brennus, Paul Ricaut, and others in that form, make the garden sweet and gay. There in large masses are Géant des Batailles, Jules Margottin, Souvenir de la Malmaison, Coupe d'Hébé, with several more old favourites, such as Acidalie and Mrs. Bosanquet. There are many beds of the old Monthly China, and a glowing mass of Cramoisie Supérieure, also many beds of Teas. This suburban home of the Rothschilds is crowded with Roses, which Mr. Roberts grows well, as he does Grapes and all other kinds of fruit and flowers in his extensive charge; but we can only now allude particularly to the Roses.

SEEDLING BRIAR STOCKS.

May I be permitted to state a fact respecting the hardiness of the seedling Briar as a stock for Roses? Last November I had cause to move a quantity of Roses in dormant bud which were on seedling Briars. By some mistake, when all the plants were dug up and tied in bundles, three plants of Gloire de Dijon were left root upwards on the bare ground, and there they remained exposed to very severe frost for three weeks and a day, when I happened to go and find them. As an experiment I brought them home from the farm where they were and planted them, never thinking they would live, but to my astonisbment they are the best maiden plants I have. Give me the seedling Briar as a stock for Roses.—H. I. Machin.

THE PERSIAN YELLOW ROSE.

I was pleased to read the note on the Persian Yellow Rose. In the garden of the Rev. Lewis Jones at Elford there is a very fine specimen of that lovely Rose. The clump is about 8 feet in diameter, 6 feet high, and forms a huge bouquet of green and gold every summer. The branches touch the ground at its circumference, and altogether it is a floral treat never to be forgotten. We have a good bush of it in the kitchen gardens here, but it will not compare with Mr. Jones'. The Persian Yellow should not be pruned if it is to be seen in its glory. I may say in regard to its lasting properties when cut that I gathered a handful of blooms on the 23rd ult., and I threw them away on the 28th. The flowers retained their colour, but they were withered; they thus lasted five days in water. I only gathered those flowers that were not more than half expanded. I forward a few for test of durability.—J Udale.

[The flowers arrived as fresh as possible, the buds expanding in water, and looked well several days after they arrived.]

ROSES IN WINTER.

The papers by Mr. Bardney become more interesting as they advance, but we realise that he gives his experience with full knowledge, and is liable to forget the learner's difficulty of filling up the details required to complete the sketch. I should be much obliged if Mr. Bardney will inform us in our Journal—1st, How Tea Roses are to be kept at "rest" during September and October when planted out in a house with the roof lights removed? for the rain would fall on them and mild growing weather affect them as if quite in the open, where Tea Roses grow and flower freely then. 2nd, What is the composition, nature, texture, and composition of the soil or compost to be used for such large pots and such young plants? 3rd, Will Mr. Bardney kindly say whether, in growing Roses for cut flowers for market in January, February, and March, it would be most profitable to plant out in side beds near the glass, or to grow them in pots, taking into account all the labour in the latter method?—S. S.

THE BANKSIAN ROSE AS A STOCK FOR MARECHAL NIEL.

Eight years ago we had a plant about twenty years old of the white Banksian Rose growing in a greenhouse up a pillar and trained horizontally to wires, near which is a ridge-and-furrow roof. It flowered profusely every April, lasted a few weeks, and then was over for the rest of the year. It then threw out a number of vigorous shoots as stout as good-sized Asparagus, and in June eight years ago three buds were inserted on three of the best placed near the roof of that fine Rose Maréchal Niel. We had not thought or heard of this as a suitable stock for the Maréchal; it was done more as an experiment, and to our surprise within a fortnight all three buds began growing vigorously, and when about a foot in length all the remainder of the Banksian was cut clean away, several barrowloads of it.

The three young shoots were allowed to grow without stopping, merely tying them to the wires, which were horizontal, as they grew, when at the end of three months (September) one shoot was about 20 feet long and the other two not quite so much. It then ceased to grow any more that season, but in December each shoot was shortened about one-third, and later on in March and April fine Roses were produced from nearly every eye on these shoots, which were about 1¼ inch in circumference. When it had ceased flowering the shoots were cut back further to a good eye that had not flowered, and during the summer a large number of fine shoots were made from all dormant eyes, and a large quantity of fine Roses the following spring. Every year since the tree has produced hundreds of blooms. The main stems now average 10 inches in circumference, in the thickest part 14 inches.

In May, after the main flowering, a good deal of the useless and past-flowering wood is cut out, a good washing of softsoap and water is given with the syringe. The roots, which are in a border of loam and manure in the centre of the house, are well deluged with water, and new growth is encouraged during the summer with occasional washings of clean soft water. December we find is a good month for pruning, regulating, and tying the shoots; only the weak wood is cut out and the strong shoots slightly cut back. Two or three times in the spring months, while the Roses are swelling, the bed has a good soaking of weak liquid manure. The Maréchal Niel usually throws single buds, but so vigorous have been some of the shoots that three buds, and in many instances five, have been produced, and all developed well. The Banksian as a stock have proved beyond our expectation, and cannot be too strongly recommended. I am trying Celine Forester as a stock for the Maréchal, but with what result must be left for the future. The Rose on the Banksian was referred to on page 4 by "A Londoner." He was astonished by its vigour, and suggested that a few particulars respecting it would be interesting and suggestive.—A. Harding, *Orton Hall.*

DISS.—July 3rd.

The forty-fourth Exhibition in connection with this Society was held on Tuesday, July 3rd, in the Cricket Meadow, Roydon Road. Notwithstanding the excessive rainfall of the previous day the Exhibition, as a whole, was the largest and best ever held by the Society. Special features were introduced this year, which had the effect of producing competition from a wide area. In those departments may be mentioned a magnificent collection of herbaceous flowers. Messrs. G. Paul & Son of Cheshunt carried everything before them, being large exhibitors; while Messrs. Gilbert & Son, Ipswich; Mr. Burrell, Cambridge; and Mr. G. Norris, Blo' Norton, were also successful exhibitors.

As usual, there was a most attractive show of Roses, for which the Rev. H. A. Berners carried off the principal awards, showing two boxes, and taking two first prizes for thirty-six distinct trusses and twelve Teas, also the National Rose Society's silver medal for the best Tea. The Rev. F. Page Roberts also came out well with Roses, taking first prize for best twenty-four single trusses, second for twelve Teas or Noisettes, and the National Rose Society's silver medal for the best H.P. in any collection. The Rev. A. Foster-Melliar was third in the thirty-six class, second for twenty-four, and second for twelve. The Rev. H. T. Frere took second prize for thirty-six, third for twenty-four, and first for twelve. The Rev. J. H. White taking first for twelve distinct trusses, and the same for six Teas or Noisettes.

Plants in pots were shown in large numbers, the chief prizes for Pelargoniums in bloom going to Rev. H. T. Frere and Miss Taylor. Owing to the late season the show of vegetables and fruit was scarcely equal to former years, but there was a good collection of indoor grown fruit. The cottagers' show, though small, was good, and there was also a small show of honey.

WOODBRIDGE.—July 4th

The thirty-sixth annual Show, held under the auspices of the Woodbridge Horticultural Society, took place in the Abbey grounds, Woodbridge, on Wednesday, the 4th. The weather was not at all satisfactory, as about one o'clock a thunderstorm came on, accompanied by a heavy downpour of rain, which kept many people away from the Show; notwithstanding, there was a large attendance. Besides the horticultural show, there was a military display, plaiting the May pole, &c., by some non-commissioned officers and men of the 20th Hussars. The regimental band performed both morning and evening.

Cut flowers occupied the first place, and of these there was a very good display, though the weather has been most unfavourable for them. Roses made a much better show than last year. In the open class for thirty-sixes Mr. B. R. Cant, Colchester, had an easy win. In the ameteurs' classes the Rev. H. A. Berners and the Rev. A. Foster Melliar carried off all the first and second prizes, the former taking no less than four first prizes, and in the open class for twelve Tea-scented and Noisette Roses beating Mr. B. Cant, who was second, and the Rev. A. Foster Melliar third. The twelve Teas shown by Rev. H. A. Berners were exceptionally fine both in size and colour. The names of the twelve were:—Comtesse de Nadaillac, Jean Ducher, Madame Watteville, Innocente Pirola, Marie Van Houttc, Maréchal Niel, Anna Ollivier, Catherine Mermet, Niphetos, Madame Lambard, Hon. Edith Gifford, Souvenir d'Elise.

There was a good show of pot plants. In the classes for stove and greenhouse plants Messrs. Gilbert & Son, Ipswich, beat all comers with two very fine collections. Lord Rendlesham sent some beautiful Orchids. The Duke of Hamilton, Lord Rendlesham, Miss Jones, and Mrs. J. Greenwood showed some very handsome exotic Ferns. There was a very good collection of fruit in spite of the backwardness of the season, Lord Rendlesham taking first prize with a very fine collection.

DURSLEY.—July 4th.

The first Show of this Society was held in the cricket field adjoining the town under very favourable auspices, the backwardness of the season and the late inclement weather being taken into consideration. Although somewhat late in being formed, the Committee have worked with a will to get up a good Show, and the success which has crowned their efforts is due in no small measure to the energetic Hon. Secretaries, Messrs. H. J. Small and E. W. Cooke. It was wisely decided to give good prizes in a small number of classes, this course of action bringing a fair number of entries from nurserymen and amateurs, some of which unfortunately, owing to the boisterous weather of 2nd and 3rd inst., were unable to show. However, Messrs. Cooling & Sons of Bath, Messrs. Jefferies & Sons of Cirencester, and Mr. S. P. Budd staged their exhibits, and this with a goodly number of local entries made up a show which gave geueral satisfaction to a large concourse of spectators. To make it still more attractive a fine collection of stove and greenhouse plants from gardens and nurseries in the neighbourhood were arranged along the staging. The superiority of the Bath Roses was apparent at a glance, the storm which passed over the Cotswolds and the valley in which Dursley is situated, damaging many good blooms, seemed to have touched theirs more gently.

In Class 1, twenty-four H. P.'s, three trusses of each, Messrs. Cooling and Son, Bath, were first with remarkably fresh even blooms, comprising A. K. Williams, Madame E. Verdier, Charles Lefebvre, La France, Madame Marie Verdier, Chas. Darwin, Madlle Marie Cointet, Le Havre, François Michelon, Comtesse de Serenyi, Ulrich Brunner (very fine), M. Noman, Mdme. Gabriel Luizet, Magna Charta, Mdme Hippolyte Jamain, Louis Van Houtte, and other similar varieties. Messrs. Jefferies & Son, Cirencester, were second, their best blooms being François Michelon, Annie Laxton, Mdlinc. Montet, and A. K. Williams—a wet season appears to suit this variety, as it was well shown in several classes.

For thirty-six trusses, H.P., Messrs. Cooling were again first, staging in addition to the varieties already named, Marquise de Castellane, Duchess of Bedford, Violette Bouyer, Victor Hugo, Barthelemy Joubert, Baroness Rothschild, Madame Chas. Wood, John Hopper, Countess of Rosebery, Guillaume Gillemot, Lady Mary Fitzwilliam, Pride of Reigate (the only bloom shown of that variety), Prince Arthur, Countess of Oxford, Helen Paul, Earl of Beaconsfield, Pride of Waltham, and Alphonse Soupert. Messrs. Jefferies were again second, the effect of the weather being apparent on such varieties as Lady Mary Fitzwilliam, but their box contained very good blooms of Earl of Pembroke, Mrs. Baker, Marie Finger, Madame Ducher, and Mary Pochin. In the class for Teas or Noisettes the competition was closer, but the fresher blooms of the Bath firm gained them the first place, their finest blooms being Alba rosea, Paul Nabonnand, Souvenir de Paul Neyron, Devoniensis, Catherine Mermet, Madame Cusin, Innocente Pirola, and Grace Darling. Messrs. Jefferies showed good blooms of Rubens, Perle des Jardins, Etoile de Lyon.

The prizes for amateurs and gentlemen's gardeners were most keenly contested, and here again the Bath Roses came to the front, Mr. S. P. Budd, Bath, staging some of the best blooms in the Show, being followed by Mr. Boner, Angeston, in the H.P. classes, and by Mr. A. B. Winterbottom, M.P., in the Teas or Noisettes. Some interesting exhibits were staged in the classes restricted to amateurs within four miles of Dursley, not employing a regular gardener, and with a better season these classes are sure to be popular ones. Six boxes of Roses were shown, the first being awarded to a hanging basket of Maréchal Niel, the second and third to neat light arrangements.

BATH.—July 5th.

Nothing but fine weather was wanted to make this a great success, but the promoters had to put up with another great disappointment. Never before has the competition been so keen, and on the whole the quality was surprisingly good. Many complaints were heard on all sides as to the bad effect of the weather upon the blooms, but this was not so apparent among the numerous exhibits from various parts of the country, and at any rate much inferior displays have been held in what were considered more favourable seasons. As will be seen by the prize list, nearly all the great growers were well represented, the Bath fixture always proving popular among exhibitors, and there was a marked improvement in the classes confined to local growers.

Nurserymen's Classes.—The premier prizes were offered for seventy-two varieties, single trusses, and with these Messrs. G. Paul and Son, Cheshunt, were first with fine fresh blooms, among which were good examples of Francisca Kruger, Duke of Teck, Victor Hugo, Madame Henry Pereire, and A. K. Williams. Mr. B. R. Cant, Colchester, was a good second, his best being Camille de Rohan, Ulrich Brunner, and Issac Pereire, while the third prize was well won by Messrs. Keynes, Williams & Co., Salisbury. With thirty-six varieties, triplets. Mr. B. R. Cant was first, Messrs. Paul & Son second, and Messrs. Keynes, Williams and Co. again third. Mr. Cant's best blooms were Merveille de Lyon, Niphetos, Reynolds Hole, Duke of Edinburgh, Baroness Rothschild, and La France. The competition with eighteen varieties was exceptionally close and good. Mr. G. Prince, Oxford, was first, Messrs. J. Cooling & Sons, Bath, second, and Messrs. J. Jefferies & Son, Cirencester, third. Mr. G. Prince was also well first with thirty-six triplets, Messrs. Curtis, Sanford & Co., Torquay, being second, Messrs. J. Cooling & Son third, and Messrs. J. Jefferies & Son were highly commended. The class for eighteen Teas or Noisettes was a good one and attracted much attention, but some of the exhibitors, including Mr. G. Prince, neglected to notice the rule that Hybrid Teas were excluded, and had to be disqualified accordingly. Mr. J. Mattock, Oxford, was first, Mr. B. R. Cant second, Messrs. J. Jefferies & Son third, and an extra prize was awarded to Mr. Prince, whose stand included the lovely bloom of Comtesse de Nadaillac, which gained the silver medal of the National Society offered for the best Tea or Noisette in the Show.

Amateurs' Classes.—The best thirty-six varieties, single trusses, were staged by Mr. R. N. G. Baker, Heavitree, who had remarkably massive and fresh blooms. Mr. W. J. Grant, Ledbury, was a good second, and Mr. S. P. Budd, Bath, third. Similar positions were held by these exhibitors in the class for eighteen triplets, and here as in the other classes in which he competed Mr. Budd erred in staging too young blooms. Mr. W. J. Grant had the best twelve Teas, Mr. Budd being second and Mr. Baker third. Other successful exhibitors were Messrs. A. Evans (who was first with twenty-four distinct varieties), C. Taylor, J. Smith, Warminster, and W. Narroway. The principal prizewinners in the local classes were Messrs. S. P. Budd (who among other prizes took the gold medal offered for a stand of twenty-four varieties, distinct), Mr. A. Hodges, Rev. C. C. Layard, Rev. J. E. Gardiner, Mr. Garraway, and Mr. G. L. Hobbs.

Open Classes.—A special class was provided for twelve Hybrid Perpetuals and twelve Teas or Noisettes, triplets, and with these Mr. S. P. Budd was first, and Messrs. G. Cooling & Son and Mr. B. R. Cant equal second. The best twelve trusses of any crimson Rose were staged by Mr. B. R. Cant, who had A. K. Williams in good condition, in this stand being found the bloom to which was awarded the silver medal as the best hybrid Rose in the Show. Messrs. Curtis, Sanford & Co. were well first with a stand of La France, and also with twelve trusses of any Rose. Other successful exhibitors in these classes for a single variety were Messrs. J. Mattock, A. Evans, Paul & Son, R. N. G. Baker, Keynes, Williams & Co., G. Prince, and Cooling & Son. Messrs. J. Mattock and G. Cooling & Son were the principal prizewinners with bouquets and baskets of Roses, each having highly creditable exhibits.

Messrs. G. Cooling & Son staged, but not for competition, a collection of old-fashioned Roses, which they now make quite a specialty, and their exhibits never fail to attract the attention of visitors. Messrs. Standish, Ascot, arranged a pretty group of Japanese Maples; Mr. Hooper, Bath, had a good collection of Carnations, Picotees, and Pansies; and Mr. A. A. Walters, Bath, also contributed plants and cut blooms.

BRENTWOOD.

The summer Exhibition of the Brentwood Horticultural Society was held on Thursday, the 5th of July, in the beautiful grounds of Coombe Lodge, Great Warley, the residence of Mr. Edward Ind. The gardens were thrown open to the public, and the weather in the afternoon was all that could be desired. There was a fair Exhibition, but hardly up to the standard of previous years. Roses, considering how late they are this year, were well shown, several good stands being staged, although many blooms showed signs of the rough weather. The premier prize for forty-eight varieties was deservedly awarded to Mr. Frank Cant, who was well ahead of the other three competitors with fine well-built blooms of good substance, the most noteworthy being Etienne Levet, Louis Van Houtte, Prince Camille de Roban, François Michelon, and two Roses of recent introduction—viz., Viscountess Folkestone and M. Baron. Mr. W. Harrington, gardener to Mr. E. Mitchell of Hornchurch, was placed second, and Mr. Saltmarsh of Chelmsford third. For twenty-four trebles Mr. F. Cant was again first. For twenty-four singles, amateurs residing in Essex, Mr. Wallis of Brentwood was first, showing well-shaped blooms of A. K. Williams,

Conntess of Rosebery, and Pierre Notting. For twelve Roses there were seven competitors, Mr. J. C. Quennell being awarded first prize. For six Teas there were four entries, the first prize going to Mr. Harrington, who exhibited a good Innocente Pirola. For three Roses grown by cottagers within five miles of Brentwood, the first prize was won by Mr. Judd of South Weald, who staged in gingerbeer bottles, as the schedule required for this class, three very creditable specimens of La France, Gloire de Dijon, and Dr. Andry.—HORACE VERNET.

CANTERBURY.

As this Society had made a new move this year, which involved the necessity of a fine day, it was with very sad feelings that all who were interested in its success regarded the terrible day that seems to have prevailed all over the country on the previous day. Torrents of rain from morning till night, accompanied with wind, so unceasing that not only did one tremble for the next day, but also for the Roses. How could they stand? Would they not all be dashed and blown to pieces? and would not Teas especially be draggled and untidy? It only shows the extreme care with which Roses are tended by amateurs when I say that nothing of the kind occurred, and that the Show held at Canterbury was held under fair skies and with a capital collection of flowers.

But first as to the locale. The Committee had made a bold effort, and had ventured to solicit the Cathedral authorities for permission to hold it within the precincts, and there, in what is called the Bowling Green, an enclosed piece of garden, sheltered from high winds, and under the shadow of the venerable towers of the grand old pile, the Rose Society's tent was pitched on the green grass, and filled to overflowing with a beautiful collection of flowers. To many of us it brought back the memory of certainly the most picturesque Show that the Society has ever held, so far as the surroundings went, when it met some years ago in Salisbury, in the Palace Gardens; although they were smaller, yet the whole of the surroundings were of the same character, and since the Society moved from the Corn Exchange, which was so admirably adapted for it, their surroundings have not been such as one could wish, and therefore this move was heartily welcomed.

Time brings its changes in all things, and in Rose shows amongst others. One greatly missed one thoroughly good exhibitor, Mr. W. H. Wakeley of Rainham, whose refined and beautiful flowers always added a charm to the Canterbury Show. Others, however, come forward, and so the game is kept up. We find exhibitors who used to show in the smaller classes moving up into higher ones, their place being taken by fresh combatants.

As this is essentially an amateurs' Society (although there are classes for nurserymen also), it is satisfactory to be able to say that the Roses exhibited by private growers were a good deal better than those shown by growers for sale. I think this is easy to be accounted for after such weather as we had the day before. Nurserymen cannot give the attention to individual flowers that the amateur does. His garden is not a forest of Zulu hats or other such like coverings. The amateur looks round the day before and sees what flowers he thinks he will want, and takes special care in shading. This it is impossible for the nurserymen to do, and hence it was that there was a want of freshness about the stands exhibited by nurserymen, while those shown by the amateurs were both clean and fresh. The leading classes amongst them were as follows:—Class 1, twenty-four varieties, one truss of each. Here four exhibitors staged, and one of those unfortunate *contretemps* which sometimes take place even amongst the most experienced exhibitors. The box exhibited by R. L. Knight, Esq., of Bobbing was a long way the best in the Show, but unfortunately it was disqualified for having two A. K. Williams in it. This must have been an inadvertence, for it is so perfectly distinct a Rose that its presence is at once observed. Owing to this mishap, Mr. R. E. West of Reigate carried off the first honours with a very excellent stand of flowers, consisting of Ahel Carrière, Marquise de Castellane, Duke of Edinburgh, M. E. Y. Teas, Captain Christy, A. K. Williams, Countess of Rosebery, Général Jacqueminot, Marie Van Houtte, Mrs. Caroline Swailes, Mrs. George Dickson (the best bloom of this variety I have seen, it is generally too thin, but this was full and very fresh in colour), Dupuy Jamain, Horace Vernet, Duke of Teck, Henri Lédéchaux, Xavier Olibo, Catherine Mermet, Mdlle. Marie Finger, Dr. Andry, Merveille de Lyon, Etienne Levet, and La France. Mr. F. Warde of East Farleigh was second, and Mr. H. Foster of Ashford third. In class 2, for eighteen, distinct, Mr. H. Foster was first with a fine box, containing Madame Gabriel Luizet, Duke of Edinburgh, Jean Larey (a flower unknown to me), Prince Camille de Rohan, Marie Van Houtte, Rubens, Marie Baumann, Madame Eugène Verdier, Beauty of Waltham, Red Dragon, Countess of Rosebery, Baroness Rothschild, Marquise de Castellane, A. K. Williams, Dupuy Jamain, Ipswich Gem (a beautiful dark Rose, which I do not recollect to have seen, and which I thought was a pink Rose, not a dark one), Marguerite Brassac. Mr. F. Warde was second with A. K. Williams, La France (very good), Duke of Edinburgh, Alfred Colomb, Baroness Rothschild, Prince Arthur (very good), Duchesse de Vallambrosa, Marie Baumann, François Michelon, Louis Van Houtte, Etienne Levet, Reynolds Hole, Madame Gabriel Luizet, Prince Camille de Rohan, Belle Lyonnaise, Xavier Olibo, and Duke of Teck. Mr. R. E. West of Reigate was third. In class 3, for twelve Teas or Noisettes, the first prize was taken by R. L. Knight, Esq., with Niphetos, Comtesse Riza du Parc, Madame Kuppenheim, Alba Rosea, Souvenir de Thérèse Levet (a beautiful bloom), Souvenir d'Elise Vardon, Catherine Mermet, Madame Cusin, and Anna Ollivier. Mr. H. Shoesmith of Saltwood, alas! no longer gardener to one whose memory will always be held in loving revereuce by all who knew him, Canon Hodgson, had a box which ran this very close, containing fine blooms of Caroline Kuster, Souvenir de Thérèse Levet, Madame Bravy, Madame Lambard, Marie Van Houtte, Marie Guillot, Comtesse de Nadaillac (a lovely bloom, but not as high coloured as sometimes), Jules Finger, Madame de Watteville, Anna Ollivier, and Princess of Wales. Mr. F. Warde was third. In class 4, for eight varieties, three trusses of each, Mr. R. E. West of Reigate was first with A. K. Williams, Gabriel Luizet, Etienne Levet, Prince Camille de Rohan, Duke of Edinburgh, Baroness Rothschild, and Marie Baumann. In class 5, for twelve varieties, Dr. Ashurst of Farningham was first with fine blooms of Duke of Edinburgh, Etienne Levet, Duke of Teck, A. K. Williams, Merveille de Lyon, Général Jacqueminot, Madame Montel, Baroness Rothschild, and Alfred Colomb. In class 6, for nine Teas, Miss M. Hawksworth of Erdington was first with good blooms of Countess Riza du Parc, Marie Van Houtte, Catherine Mermet, Madame Lambard, Madame Cusin, Madame de Watteville, &c. These were the principal classes amongst the amateurs. The National Rose Society's silver medals for the best Hybrid Perpetual and the best Tea or Noisette amongst the amateur classes were awarded, the first to R. L. Knight, Esq., for a splendid bloom of A. K. Williams, and the other to Mr. H. Shoesmith for the lovely bloom of Comtesse de Nadaillac already mentioned.

Passing to the nurserymen's classes, the first prize was taken for thirty-six varieties by Messrs. Paul & Son, Cheshunt, with moderate flowers, amongst which were, however, good blooms of Lady Alice, the white sport of Lady Mary Fitzwilliam, Madame Joseph Desbois, a rather new Rose of good quality; A. K. Williams, Marie Baumann, Duke of Edinburgh, Duke of Teck, Madame Lacharme, Madame Gabriel Luizet Alfred Colomb, Prince Camille de Rohan, Niphetos, Xavier Olibo, &c. Mr. B. R. Cant of Colchester was second, and Mr. George Mount of Canterbury third. Mr. Mount was first in Teas with a beautiful box of fresh blooms.

Last year when I attended the Canterbury Show I ventured to prophesy from the appearance of the Roses there that we should have a good season. Like a good many propheeies connected with weather, I was wrong. Yet do I venture once again. I think that unless the unforseen occurs we may look forward for a first-rate season, such as we have not had for many years. There is no present prospect of blazing hot weather, such as we have had in the beginning of July of late years, and if only thunderstorms keep off Roses must be good.

It remains but to say that the Secretaries, the Rev. H. B. Biron and Mr. Dean, worked with hearty good will, assisted by the Committee, and I can only hope that the financial results may be good.

FARNINGHAM.

THIS prettily situated little Kentish village, situated on the banks of the Darenth (dear to all lovers of the gentle art), did not appear in its most attractive form when on Thursday last its annual Exhibition of Roses was held. Lowering skies, heavy thunder showers, with fitful glimpses of sunshine do not form the most fitting accompaniments of a Rose show. Happily as the day wore on the weather improved, and the evening was, comparatively speaking, fine. The Exhibition was held as usual in the ground facing the Hotel, and very little change was made in the arrangements; but changes here, as elsewhere, had taken place in the *personnel* of the Show. The worthy and excellent Chairman, Mr. Dalton, was, alas! no longer with the Society, which will find it difficult to fill the place his death has made vacant. Then in the exhibitors changes had also taken place. Here too Mr. W. H. Wakley used to show, and his fine Roses were sadly missed. Earl Stanhope, too, did not put in an appearance, and generally there was a slight falling off. This is to be easily accounted for by the backwardness of the season and the unsettled character of the weather, but despite these drawbacks the Roses were well represented, and the quality of the flowers good. There is one comfort in the character of the weather, Roses do not suffer from the heat of the tent, while the highly coloured Roses show pre-eminently well.

Here, as in other of these local societies, the amateur is especially (and rightly so) considered. It is they who form the backbone of such societies, and their enthusiasm helps forward the general cultivation of the Rose. There are then but two classes where nurserymen entered, and these are open, and, as it will be seen, an amateur occupied the second place.

The class for thirty-six varieties, Mr. Frank Cant, Colchester, was first with a good box, containing Duke of Edinburgh, Madame Cusin, Le Havre, Madame Gabriel Luizet, Lord Beaconsfield, Madame Angèle Jacquier, Ulrich Brunner, Rubens, Comtesse d'Oxford, Niphetos, Dr. Sewell, Souvenir d'un Ami, Magna Charta, Maréchal Niel, Général Jacqueminot, Marie Van Houtte, Sultan of Zanzibar, Devoniensis, Duchess of Bedford, Capt. Christy, Mons Noman, Lady Mary Fitzwilliam, Dr. Andry, Queen of Queens, Heinrich Schultheis, Madame Eugène Verdier, Marie Baumann, Mrs. John Laing, Madame Alphonse Lavallée, Souvenir de la Malmaison, Horace Vernet, The Bride, Alphonse Soupert, La France, François Michelon, and Souvenir d'Elise. Mr. R. E. West of Reigate was second with an excellent stand of Roses, but wanting in variety of colour. Messrs. Geo. Bunyard & Co., Maidstone, were third with good but smaller blooms. In Class 2, for twelve Teas and Noisettes (open), the first prize was awarded to the Rev. F. A. Burnside, of Much Birch, Hereford, for a fine stand of very clear and fresh blooms, consisting of Innocente Pirola, Anna Ollivier, Souvenir d'Elise, Hon. Edith Gifford, Madame Lambard, Maréchal Niel, Souvenir de Gabrielle Drevet (a very pretty new Rose), Marie Van Houtte, Madame Cusin, Rubens, and Madame de Watteville. Mr. F. Cant was second. In Class 3, for

twenty-four varieties, single trusses, Mr. R. E. West had a stand of beautiful flowers, François Michelon (extremely beautiful), Général Jacqueminot, Merveille de Lyon, Duke of Edinburgh, Marquise de Castellane, Prince Camille de Rohan, Etienne Levet, Comte Raimbaud (very fine), Marie Baumann, La France, Camille Bernardin, Duchess of Bedford, Madame Isaac Pereire, Charles Lefebvre, Madame Victor Verdier, Dr. Andry, Comtesse d'Oxford, Louis Van Houtte, Countess of Rosebery, A. K. Williams, Marie Finger, Baroness Rothschild, and Madame Prosper Laugier. In Class 4, for twelve, Mr. A. Mason was first with Baroness Rothschild, Etienne Levet, Niphetos, Louis Van Houtte, Souvenir d'Elise, A. K. Williams, Thomas Mills, Senateur Vaisse, La France, Duchesse de Caylus, Madame Gabriel Luizet, and Duke of Edinburgh. In Class 5, for nine varieties of Teas, the Rev. F. A. Burnside was first with a very pretty box of the following :—Maréchal Niel, Madame Cusin, Souvenir d'un Ami, Madame de Watteville, Hon. Edith Gifford, Marcellin Rhoda, Catherine Mermet, and Rubens. In Class 6, for six Roses of any one variety, dark, Mr. Fuller, The Vicarage, Bexley, was first with fine blooms of Charles Lefebvre; and Geo. Christy, Esq., first for six light, with highly coloured blooms of Maréchal Niel. In Class 8, for twelve varieties, Mr. Fuller was first with good blooms of Dupuy Jamain, Madame Gabriel Luizet, Xavier Olibo, Pride of Waltham, Ulrich Brunner, Merveille de Lyon, Etienne Levet, Louis Van Houtte, Alfred Colomb, Heinrich Schultheis, Baroness Rothschild, and A. K. Williams. In Class 9, for nine varieties of Roses, Mr. T. Barker was first with Senateur Vaisse, Pierre Carnot, Gloire de Bourg-la-Reine, Earl of Pembroke, Thomas Mills, Merveille de Lyon, Dr. Sewell, Madame Hunnebelle, and Prince Camille de Rohan. In Class 10, for six varieties of Roses, Mr. Hardwick was first with Maréchal Niel, Lord Macaulay, A. K. Williams, Annie Laxton, Duke of Edinburgh, and Fisher Holmes. In the class for six varieties of Teas Mr. A. Wallace was first with Etoile de Lyon, Souvenir de Thérèse Levet, Catherine Mermet, Niphetos, Madame Margottin, and Anna Ollivier.

The decoration classes are always a strong feature at the Farningham Show, and although some of those who used to send some of the most beautiful arrangements have passed away, yet there was no diminution in the interest; and some most beautiful stands, bouquets, sprays for ladies' dresses, buttonhole bouquets. &c., were set up. The principal honours were divided between Mrs. Hugh Smith, whose set of three stands for centre of dinner table was most tastefully arranged; Miss Hassell, who carried off no less than four first prizes; Mrs. Muggeridge, and Miss Reynolds. There were eight tables arranged, some of which were very pretty, others the reverse. Mr. Seal carried off the first prize, Miss Hassell the second, and Mr. Abbott, gardener to Sir W. Hart Dyke, the third There was a fair display of cottagers' productions, but not so good as I have sometimes seen them. Strawberries were very fine, but though Farningham is in the very centre of the Strawberry district, the only kind exhibited was Sir Joseph Paxton. On my way to the station I dropped in for a short visit to the Home of Flowers, where Mr. Cannell has always something to show one. It is impossible to exaggerate the beauty of some of the flowers which I saw. I had only time to run through the grand Pelargonium house, the Ivy-leaved Pelargoniums, and the single and double Begonias, but what a blaze of beauty there was! Then when one recollects the old Ivy-leaf Pelargonium, and sees the wondrous trusses of double flowers, such as Madame Thibaut, Souvenir de Charles Turner, and some especially beautiful colours which are yet to come out, we wonder what will follow. The same may be said of Begonias. The marvellous single and double varieties are bewildering in their beauty, variety of colour, &c. There was also a grand new Heliotrope which seemed to me to be finer than anything I had seen. Had I been able to remain I should doubtless have seen many wonderful things, but I saw enough to convince me that the Home of Flowers is in no danger of losing its reputation.

HITCHIN.

Owing to the indefatigable zeal of the Secretary of the Hitchin Rose Society, the Rev. F. H. Gall, who quaintly described himself as the most enthusiastic and the most unsuccessful of Rose exhibitors, this Society still maintains steadily its position, and around its many discouraging circumstances succeeded in bringing together a goodly number of exhibitors. Its principal local exhibitor, Mr. E. B. Lindsell, was this year not able to hold the position which he under ordinary circumstances would be able to maintain, but his garden being exposed and of a heavy character his blooms were not open. I went through it the night before in order to advise as to whether he should exhibit in the highest class at the National on Saturday, and I was quite surprised at the backwardness of his plants. Most vigorous and healthy they were, indeed could not be well better, each with fine fat buds, but even then as it was blowing hard I could see how terribly they were switched about, and how impossible it would be for him to attempt the higher flight to which he aspired. I also had an opportunity of seeing Mr. Gall's new garden, where I think he ought and will grow Roses better than he has ever done. He is one of those conservatives who stick to the standards, but if he goes in for dwarfs I see no reason why with his enthusiasm he should not take a higher position than he has hitherto done. Other good exhibitors were present in the—(I was going to say person—but to my great regret he himself was absent)—well, in Roses of my old friend, Mr. Curtis of Chatteris, the Rev. W. H. Jackson of Stagsden, Dr. King of Madingley, and the Rev. O. Fisher, known to many Rose growers by his excellent little book on Rose culture. Thus there were the elements of a good Show, and despite of many drawbacks it deserved that character. After the judging was over the Rev. F. H. Gall entertained the exhibitors at a luncheon at the "Sun Hotel," a hostelry well known to travellers of the olden time.

The Show was held as before in the grounds of J. Delmé Rateliffe, Esq., and the tent was fairly well filled. There were three competitors in the nurserymen's classes—Mr. Bureh of Peterborough, Mr. Burrell of Cambridge, and Messrs. Paul & Son. In the highest class for forty-eight single the prizes were awarded in the order named. Messrs. Bureh's flowers consisted of Madame Victor Verdier, Niphetos, François Michelon, Souvenir de Paul Neyron, Perle des Jardins, Magna Charta, Mdlle. Eugénie Verdier, Marie Van Houtte, Duchess of Bedford, Mons. Noman, Xavier Olibo, La France, Constantine Tretiakoff, Madame Lambard, Madame Charles Wood, Madame G. Luizet, Madame Bravy, Louis Van Houtte, Barthélemy Joubert, Rubens, Star of Waltham, Lady Mary Fitzwilliam, E. Y. Teas, Violette Bouyer, Catherine Mermet, Marguerite de St. Amand, Senateur Vaisse, Comtesse de Serenye, Marie Baumann, Queen of Queens (dingy), Captain Christy, Camille Bernardin, Madame Willermoz, Jean Dueher, Alfred Colomb, Maréchal Niel, Madame Cusin, Marie Verdier, Anna Ollivier, Louis Van Houtte, Grace Darling, A. K. Williams, Innocente Pirola, Prince Camille de Rohan, and Comte de Paris. In class 2, for twelve trebles, Mr. Bureh was again first with Marquise de Castellane, Niphetos, François Michelon, Madame G. Luizet, Marie Verdier, Madame Bravy, Lady Mary Fitzwilliam, Ulrich Brunner, Henri Schultheis, Anna Ollivier, Innocente Pirola, and Exposition de Brie.

In the amateurs' class the first prize for twenty-four singles was awarded to Mr. J. L. Curtis of Chatteris for a beautiful stand, containing A. K. Williams, Baroness Rothschild, Louis Van Houtte, Her Majesty (a very good bloom, uncommonly like Marie Cointet), Marie Cointet, Etienne Levet, Ulrich Brunner, Marguerite de St. Amand (very fine), Alfred Colomb, Niphetos, Duke of Edinburgh, Catherine Mermet, Comtesse de Nadaillac (very lovely), Duke of Wellington, Madame Cusin, Madame G. Luizet, Reynolds Hole, Le Havre, Innocente Pirola, François Michelon, Niphetos, Jean Dueher, and Madame Victor Verdier. Mr. E. B. Lindsell, second, had an excellent box, containing amongst others a perfect bloom of Charles Lefebvre, which gained the National Rose Society's silver medal for the best Hybrid Perpetual in the amateurs' class, as did Mr. Curtis's Comtesse de Nadaillac for the best Tea. Mr. G. Fowler, of Woodford, was third. In Class 4, for twelve trebles, Mr. E. B. Lindsell was first with fine blooms of Charles Lefebvre, Maréchal Niel, Madame Gabriel Luizet, Lady Mary Fitzwilliam, Countess of Rosebery, Duke of Edinburgh, Grace Darling, A. K. Williams, Marie Van Houtte, Dr. Sewell (very good), and Marie Finger. The Rev. W. H. Jackson of Stagsden was second. In the class for eighteen singles Mr. Turner was first with good blooms of Madame G. Luizet, Etienne Levet, Alphonse Soupert, A. K. Williams, Magna Charta, Dr. Sewell, Duke of Wellington, Ulrich Brunner, Dr. Andry, Lady Mary Fitzwilliam, François Michelon, Comtesse d'Oxford, Marquise de Castellane, Fisher Holmes, Dupuy Jamain, Mons. Noman, Annie Laxton, and Madame Lambard. The Rev. F. H. Gall was second, Marie Baumann, Dupuy Jamain, La France, Abel Carrière, M. Alphonse Soupert, Reynolds Hole, Lady Mary Fitzwilliam, Merveille de Lyon, Captain Christy, Duchess of Bedford, Souvenir de Thérèse Levet, John Stuart Mill, Masterpiece, and Ulrich Brunner. The Rev. J. Lambert was third. In the class for twelves, the Rev. O. Fisher was first with La France, Etienne Levet, Comtesse de Nadaillac, A. K. Williams, Her Majesty, George Moreau, Souvenir d'Elise, Abel Carrière, Mdme. G. Luizet, Ulrich Brunner, Catherine Mermet, Madame I. Pereire. The Rev. Dr. King was second, and Mrs. Times third. In the class for nine Miss Annie Lucas was first with A. K. Williams, Victor Verdier, Horace Vernet, Captain Christy, Louis Van Houtte, Merveille de Lyon, Dr. Andry, Marquise de Castellane, and Duchess of Bedford. Miss Bailey Denton was second. In the class for sixes the Rev. E. L. Carey was first with Rubens, Madame Lambard, Souvenir de Paul Neyron, Marquise de Castellane, and Beauty of Waltham.

In the classes for Teas some very beautiful flowers were shown, and considering the showery weather, in remarkably clean condition. The Rev. Dr. King was first for eighteen with Marie Van Houtte, Caroline Kuster, Madame Lambard, Maréchal Niel, Princess of Wales, Catherine Mermet, Souvenir d'Elise, Souvenir d'un Ami, Madame Bravy, Jean Ducher, Adam, Hon. Edith Gifford, Francisca Kruger, Comtesse de Nadaillac, Souvenir de Paul Neyron, Rubens, Anna Ollivier, and Niphetos. The Rev. W. H. Jackson was second. In the class for twelve Teas Mr. Jackson was first with fine blooms of Francisca Kruger, Souvenir de Madame Pernet, Souvenir d'un Ami, Catherine Mermet, Maréchal Niel, Comtesse de Nadaillac, Innocente Pirola, Hon. Edith Gifford, Madame Cusin, Rubens, and Madame Lambard. Mr. E. B. Lindsell was second. In the class for six Teas the Rev. O. Fisher was first with Grace Darling, Caroline Kuster, Catherine Mermet, Souvenir d'Elise, Comtesse de Nadaillac, and Souvenir d'un Ami. In the class for any other variety Mr. Curtis was first with Marie Cointet, and Mr. Wilkins second with A. K. Williams. For the best six Teas of any one variety Mr. Curtis was first with Caroline Kuster, and Mr. Parker second with Maréchal Niel. The silver medal for the best Hybrid Perpetual was awarded to Mr. Lindsell for Charles Lefebvre (a magnificent bloom), and that for the best Tea to Comtesse de Nadaillac. Unfortunately the weather was not propitious, heavy showers having fallen all through the morning, and the marvel was that with such weather the flowers were shown so clean and perfect.

MAIDSTONE ROSE CLUB.

The annual Exhibition of Roses in connection with this Club was held in a marquee in the grounds of the Old Palace last week. The

attendance, which was very fashionable, was not so large as last year, owing no doubt to the heavy showers which came down at frequent intervals during the day. Had the weather been fine a better place could not have been found in which to hold the Show than in the picturesque grounds of the Old Palace, which have recently been greatly improved. The arrangements were carried out under the superintendence of the indefatigable Hon. Secretary (Mr. Hubert Bensted) and a Committee, and, as far as the weather permitted, gave every satisfaction. The exhibits were judged by Messrs. J. D. Pawle and G. Bunyard, who awarded prizes of the value of about £25, besides the valuable cup presented by the Mayor. The Judges were assisted in the ladies' department by Mrs. R. L. Knight of Sittingbourne. The Mayor's cup, which was an excellent specimen of the silversmith's art, was won by Mr. R. L. Knight of Sittingbourne, for one truss each of the H.P.'s, and twelve Tea-scented Noisettes. Mr. T. Hollingworth of Turkey Court, who is famous for his Roses, exhibited several stands of Roses not for competition, as did also Mr. Bunyard and Mr. Frost. Mr. Bunyard's Shirley Poppies were much admired, and Mr. Frost's Spanish and English Irises and a plant of Rose d'Amour received their share of attention. Groups of splendid decorative plants were also kindly sent from Vinters'.

The following is the prize list:—Twenty-four varieties, any kinds, one truss of each—First, Mr. F. Warde; second, Mr. R. E. West. Twelve varieties, Tea-scented and Noisette, one truss of each—First, Mr. H. Shoesmith. Twenty-four varieties, twelve Hybrid Perpetuals and twelve Tea-scented and Noisette, one truss of each—First, Mr. R. L. Knight, cup; second, Mr. F. Warde; third, Mr. A. T. Killick. Eighteen varieties, one truss of each—First, Mr. H. Foster; second, Mr. R. E. West. Twelve varieties—one truss of each—First, Mr. R. L. Knight; second Messrs. Ashurst and Tucker; third, Mr. J. Smythe. Twelve varieties, Tea-scented and Noisette, one truss of each—First, Mr. R. L. Knight; second, Messrs. Ashurst and Tucker. Eight varieties, three trusses of each—First, Mr. F. Warde; second, Mr. R. E. West. Nine varieties, one truss of each—First, the Rev. H. B. Biron; second, Mr. H. Monckton. Six varieties, Tea-scented and Noisette, one truss of each—First the Rev. H. B. Biron; second, Mr. H. Monckton. Six varieties, three trusses of each—First, the Rev. H. B. Biron; second, Mr. A. T. Killick. Six varieties, Tea-scented and Noisette, three trusses of each—First, Mr. R. L. Knight; second, the Rev. H. B. Biron; third, Mr. H. Shoesmith. One variety—First, Mr. H. Shoesmith; second, Messrs. Ashurst and Tucker and Mr. R. E. West, equal. A device consisting of Roses combined with Ferns or other foliage—First, Miss M. E. Laurence; second, Mrs. Killick. Shoulder-knot consisting of Roses combined with Ferns or other foliage—First, Mrs. Knight; second, Mrs. H. B. Biron; third, Mrs. Tasker; Fourth, Miss E. Byrant. Buttonhole bouquet consisting of one or more Rose buds—First, Mrs. H. B. Biron; second, Miss Mercer.; third, Mrs. Tasker; fourth, Miss Cecil Laurence.

SUTTON.

Two circumstances sadly interfered with the extent of this Exhibition—the terrible character of the weather, and the fact that it was held on the day preceding the National Rose Show at the Crystal Palace, hence of all the nurserymen who had promised to put in an appearance only one, Mr. Rumsey, came, and several amateurs whom we are accustomed to see in good force at Sutton, such as Messrs. Slaughter and Chealcs, were absent. This arises from various causes. Amateurs cannot often have a double supply of boxes, and hence they have to wait until the Exhibition is closed; then it is too late to get home to cut their Roses and stage them for the next day, nor can they very well leave their gardener behind, for they want all the force they can to get their boxes ready for the Exhibition. Rose-showing is not an easy game to play, and as I watched the energetic movements of my friend, Mr. Ernest Wilkins, who had got up by gaslight, rushing about in all directions through his garden, gathering a flower here and another there, I felt that I had rather not be an exhibitor. And then what weather! torrents of rain dashing the flowers, and our hopes too at the same time, and teaching us that in this climate we can never count upon anything. We had all anticipated a grand Rose season, but unless the weather soon clears up we shall again have to mourn over disappointed hopes.

Well, notwithstanding all this, there was a very excellent display of Roses at the Sutton Show. The local classes were represented by much better blooms, and the Roses exhibited were of excellent quality all round. Considerable interest was attached to a new class, the prizes for which, amounting to 6 guineas, were given by a member of the Society. In the terms of the schedule it was for the best and most tastefully arranged box of Roses, with added foliage of Ferns, &c. Any number of blooms may be staged, but not more than three of one variety, and not less than twelve varieties. Persons have over and over again found fault with the usual method of improving it, and have tried to suggest plans for its improvement, but I do not think that much progress has been made. The box which obtained the first prize was that of Mr. Ernest Wilkins, and the added foliage was simply Maidenhair Fern. It was very pretty, but after all one could not help saying, "Well, if I want to see the Roses I had rather that was out of the way." There were six competitors in this class, and their boxes formed an attractive feature of the Show.

In the class for twenty-four varieties the first prize was awarded to E. M. Bethune, Esq., of Denne Park, Horsham, for fine blooms of Maurice Bernardin, Charles Darwin, Violette Bouyer, Dupuy Jamain, Catherine Mermet, Marie Verdier, Général Jacqueminot, Lady Mary Fitzwilliam, Fisher Holmes, Xavier Olibo, Madame Isaac Pereire, Camille Bernardin, Ulrich Brunner (an enormous bloom), Senateur Vaisse, A. K. Williams, Captain Christy, Marie Baumann, Duke of Edinburgh, Madame Gabriel Luizet, Victor Verdier, and La France. The second was awarded to R. E. West, Esq., Reigate, for Madame Gabriel Luizet, Senateur Vaisse, Pride of Waltham, Marquise de Castellane, Countess of Rosebery, A. K. Williams, Duke of Edinburgh, Marie Verdier, Prince Camille de Rohan, Baroness Rothschild, Comte de Raimbaud, Violette Bouyer, Dr. Andry, Madame Lambard, Louis Van Houtte, Marie Baumann, Le Havre, Madame Isaac Pereire, Comtesse d'Oxford, Prince Arthur, and Merveille de Lyon. In class 3, for twelve doubles, Mr. West was first with clean fresh blooms of Baroness Rothschild, Marie Baumann, Louis Van Houtte, Dr. Andry, John Hopper, Alfred Colomb, Comtesse d'Oxford, Duke of Edinburgh, Madame Gabriel Luizet, Charles Lefebvre, Marie Bernardin, and Marquise de Castellane. Mr. Bethune was second with Hon. Edith Gifford, Marie Verdier, Duchess of Bedford, Alfred Colomb, Duke of Edinburgh, A. K. Williams, Madame Victor Verdier, La France, Ulrich Brunner, Charles Lefebvre, and Madame Gabriel Luizet. In class 4, for eight varieties, three of each, the first prize was taken by E. B. Lindsell, Esq., for fine blooms of Senateur Vaisse, Madame Gabriel Luizet, A. K. Williams, Rubens, Victor Verdier, Duke of Edinburgh, Comtesse d'Oxford, and Charles Lefebvre. In class 5, for twelve distinct Teas or Noisettes, the the Rev. W. H. Jackson of Stagsden Rectory, Bedford, was first with good blooms of Francisca Kruger, President, Etoile de Lyon, Hon. Edith Gifford, Marie Van Houtte, Rubens, Comtesse de Nadaillae, Souvenir d'Elise, Souvenir d'un Ami, Madame Cusin, and Catherine Mermet. The Rev. F. R. Burnside of Much Birch Rectory, Hereford, was second, and it only shows the staying powers of Teas in such weather as this to say that it was the identical twelve with which he took first prize the day before at Farningham. They had gone off a little, as might have been expected, but they were still very beautiful. In class 6, for nine double trusses, Mr. E. C. Cuthell of Chapel Croft, Dorking, was first with Le Havre, Mrs. Baker, Duke of Edinburgh, A. K. Williams, Baroness Rothschild, François Michelon, Ulrich Brunner, Pride of Waltham, and Alfred Colomb. Mr. Ernest Wilkins was second with François Michelon, Prince Arthur, Ulrich Brunner, Marie Baumann, Charles Lefebvre, Camille Bernardin, Dupuy Jamain, Comtesse d'Oxford, and Etienne Levet. The Rev. W. Wilkins of Shirley Vicarage, Croydon, and the Rev. F. H. Gall of Hitchen were equal thirds. In class 9, for six Teas and Noisettes, Mr. E. C. Cuthell was first with a very fine bloom of Alba Rosea, also Madame Lambard, Souvenir d'Elise, Innocente Pirola, Marie Van Houtte, and Maréchal Niel. In the class for twelve of any one sort, Mr. G. Fowler of Woodford, Essex, was first with a fine box of Ulrich Brunner, very high in colour and altogether excellent. Mr. Cuthell was second with Etienne Levet, and Mr. Jackson would have been awarded third for a good box of Caroline Kuster, but as there were only three competitors no third prize was awarded. The most keenly contested class amongst the local exhibits was that for the ladies' challenge cup, which must be taken by the same exhibitor two years in succession before it becomes his property. It was won by C. Walter, Esq., for the first time with an excellent stand, containing good blooms of Victor Verdier, Prince Arthur, Dr. Andry, Etienne Levet, Général Jacqueminot, and Marie Verdier.

The classes for bouquets, baskets of Roses, sprays for ladies' dresses, brackets, &c., are always well contested at Sutton, and this year was no exception to the rule. Some very pretty designs were shown, the principal prizewinners being Mrs. Ernest Wilkins, Mrs. Luke, Miss Fisher, &c. There is no show where the arrangements are better than at Sutton. This year the Committee had determined to come back to the Public Hall instead of holding it in a tent, as has been done during the last few years. It was well they so decided, for heavy rain fell, and would have made the ground most uncomfortable, and despite many drawbacks they may congratulate themselves on a good Show held in a dry place.

HEREFORD AND WEST OF ENGLAND.

THE twenty-second annual Exhibition of Roses was held, as usual, in the Shire Hall, Hereford, on Tuesday, July 3rd, and we are glad to be able to report that this, the oldest Rose Show in the kingdom, and as a matter of fact, paradoxical as it may sound, the parent as well as the affiliated daughter of the National Rose Society, proved worthy of the recognised position and popularity she has so long enjoyed. The date of the Show undoubtedly was fixed too early, but then for the last two years it has been fixed much too late, and managers of Rose shows after all are but human and liable to make mistakes. It is a matter, therefore, of unmixed congratulation that at the last exhibitors, both nurserymen and amateurs, turned up from all parts of the kingdom with collections, especially Teas, rarely equalled, giving the pleasing result of a capital Exhibition successful throughout each of its departments. We now subjoin a list of the leading collections, giving from time to time a few remarks, for which, we trust, space will be found.

Class A, nurserymen, seventy-two varieties.—First, Mr. Frank Cant, Colchester: H.P.'s, Captain Christy, Sultan of Zanzibar, superb in colour; Violette Bouyer, A. K. Williams, perfect. Tea Madame H. Jamain. H.P.'s, Duke of Wellington, Duchess de Vallambrosa, Magna Charta, Merveille de Lyon, Louis Van Houtte, Madame E. Verdier, Ulrich Brunner, Duke of Teck, fine; Lady Mary Fitzwilliam, shown everywhere well; Crown Prince, Her Majesty, Pride of Reigate, a motley interloper; Edouard Morren, Charles Lefebvre. Tea Devoniensis. H.P.'s, Alfred Dumesnil, exquisite; Madame Nachury. Tea Rubens. H.P.'s, Duke of Edinburgh, Marquise de Castellane, Fisher Holmes. Tea Madame Bravy. H.P.'s, Mrs. John Laing, Marie Rady, Marguerite

de St. Amand. Tea Madame Cusin. H.P.'s, Alphonse Soupert, Madame Ducher. Tea Madame Lambard. H.P. Dr. Sewell. H.T.'s Countess of Pembroke, La France, Dupuy Jamain. Tea Catherine Mermet. H.P. Général Jacqueminot. Tea Bride. H.P. Thomas Mills. H.T. Grace Darling. H.P. Madame Charles Wood. Tea Jean Ducher. H.P.'s Annie Laxton, Dr. Andry. Tea Souvenir d'un Ami. H.P.'s Etienne Levet, Madame H. Jamain, Anguste Rigotard. Tea Madame de Watteville. H.P. Countess of Oxford. Tea Marie Van Houtte. H.P.'s Rosieriste Jacobs, Mdme. Rothschild, Prince Camille de Rohan. Noisette Mdme Caroline Kuster. H P.'s Glory of Cheshunt, Ferdinand de Lesseps, Madame G. Luizet, Mat Baron. Tea Souvenir d'Elise. H.P. François Louvat. Tea Princess of Wales. H.P.'s Duke of Connaught, Egeria, Constantine Tretiakoff, Horace Vernet, Madame Noman, Prince Arthur. Messrs. Cranston & Co. took second honours, and Messrs. Keynes, Williams & Co. third in this division. The same order was followed in Class 2, thirty-six varieties.

In class 3, forty-eight varieties, single trusses, Mr. Charles Turner was placed first with a fine and even collection. Messrs. George Cooling and Sons second, and Mr. Charles Whiting third. Strange to say precisely the same order was followed in class 4, twenty-four varieties, three of each. Class 5, twenty-four varieties, Mr. Thomas Griffiths, Tillington, was the only exhibitor, but admirable in almost every specimen. The Tea and Noisette classes of nurserymen and amateurs were specially conspicuous both as regards the number of the exhibitors and the superb quality of the exhibits ; it is not too much to say that there really was not a slovenly or inartistic collection staged. Certainly nothing shows more how rapidly these lovely Roses are advancing in favour with the public than the extraordinary improvement to be noticed everywhere in this direction. Here, again, class 17, Mr. Frank Cant was first with an absolutely faultless collection, among which Marie Van Houtte, Souvenir de Gabrielle Drevet, Princess Beatrice, new and very good ; and Jean Ducher, were chiefly commendable. Second, Mr. Charles Turner. Third, Messrs. Cooling & Sons. Class 18, twelve varieties, three of each, Mr. Frank Cant first, Messrs. Cranston & Co. second.

In eighteen varieties of any one Rose H.P. Lady Mary Fitzwilliam in purity and softness of tone and symmetry was unapproachable ; H.P. François Michelon second, and Mons. Noman and La France equal third. Amateurs in Herefordshire are late ; besides, their Roses have suffered much from local thunderstorms ; still, Mr. Grant well sustained the credit of his county and carried off the first prize for thirty-six varieties single trusses and the N.R.S. silver medal. His collection, which wonderfully improved afterwards, comprised the following varieties : – H.P. Senateur Vaisse, Duchesse de Vallambrosa, Duchess of Bedford (exquisite), Miss Hassard, Louis Van Houtte, Tea Souvenir d'un Ami (superb), Alphonse Soupert, Mons. Noman, A. K. Williams, Lady Mary Fitzwilliam (everywhere good), Constantine Tretiakoff, Mr. John Laing (great acquisition), Violette Bouyer, Prince Arthur (fine colour), Maréchal Niel, Madame Eugène Verdier, Tea Niphetos, H.P. Ulrich Brunner (grand), Tea Hon. Miss Gifford, H.P. Duke of Teck, Tea Homère (wonderful colour), H.P. Abel Carrière, Mdlle. Eugénie Verdier, Henri Schultheis, Marie Cointet, Tea Amazone, H.P. Elie Morel, Teas Catherine Mermet, Madame Cusin, Souvenir d'Elise Vardon (splendid), Duke of Edinburgh, Marie Van Houtte, Madame Gabriel Luizet, Tea Comtesse Nadaillac, H.P. Marquise de Castellane, Charles Lefebvre. Dr. Budd carried off second prize with blooms little inferior ; indeed, in the two next classes the position of these exhibitors was reversed. Mr. J. H. Arkwright took both third prizes. In class 19, single trusses, eighteen varieties, the leading prizewinners were Rev. F. R. Burnside, Mr. Grant, and Dr. Budd ; and class 20 twelve varieties, three of each, Mr. E. Claxton, and equal second Rev. F. Burnside and Mr. Grant in the order named. The premier Tea bloom, Innocente Pirola, was taken from Mr. Claxton's box. It only remains to state, as object of public interest, that in the decorative department (a leading feature in the Hereford Rose Show) Messrs. Perkins & Son carried off in their usual artistic style the special prizes given by the Marquis of Bute.

Messrs. Smith of Worcester staged a splendid collection of herbaceous plants, the sombre colours of which contrasted strikingly with the bright reds and pinks everywhere prevailing. The Judges were :—In the nurserymen's division the Rev. F. R. Burnside. Rev. J. A. Williams, and Mr. W. Grant. In the amateur division Mr. W. Williams and Mr. Frank Cant.—HEREFORDSHIRE INCUMBENT.

ROSES AT WIMBLEDON.

AT the Summer Exhibition of the Wimbledon Horticultural Society one of the marquees was chiefly occupied with Roses. Though the best stands did not exceed in merit some of previous years the average of the Show was higher, and the collections staged better ; only in a few stands were the blooms "flopped" down on the board or moss, thus spoiling their appearance. Mr. C. Gibson, Marden Park, staged his blooms admirably, winning the chief prizes in the classes for twenty-four and twelve blooms, Mr. C. Northover closely following in the former and Mr. Alderman in the latter. Mr. Northover won seven prizes out of eight exhibits in other classes, and Mr. J. Colcby secured first prizes in the amateurs' classes for twelve and six blooms, also for six of any variety, with Louis Van Houtte, Mr. W. B. Faulkner being second in this class with Merveille de Lyon. Mr. Conway and Mr. J. W. Wright were also successful exhibitors. The effects of drenching rains were visible on many blooms, notably of the light varieties, the darks showing to much greater advantage. Messrs. J. Cheal & Sons, Crawley, were prizetakers in the open class, and Messrs. James Veitch & Sons contributed boxes of handsome blooms not for competition. The Rose tent also contained a splendid collection of hardy flowers from Messrs. D. S. Thompson and Son, Wimbledon.

THE DIFFICULTIES AND DUTIES OF GARDENERS.

UNDER the above heading your able correspondent, "An Old Servant," brings forward a subject that will cause many to think seriously, and probably not a few to discuss the matter in your columns. Your correspondent mentions a "deficiency of compliments and praise" as often being the cause of gardeners giving up their situations. That I know is frequently the case. It is also applicable to under gardeners, which is my reason for addressing you. If gardeners in general would give the matter serious consideration, and remember how happy it makes them feel when they receive recognition of their endeavours from their employers, I think there are many who would mete out a little more to their subordinates than they do generally. I have served under gardeners who never think of praising a young man, because they imagine it would make him vain. On the other hand, I have served under others who have always applauded perseverance.

The former was continually deploring that he was not complimented and treated as he should be, while I never remember hearing the latter murmuring at all. I have had many arguments on the "servant" question" with bothyites, but as I have always taken your correspondent's view of it I will not further allude to it, but expect to see more in your columns. The apprenticeship I am afraid is against us. Head gardeners, please remember that as you value the praise of your employer, so is yours valued by your subordinates.—H. S.

FLOWERING PLANTS IN SEASON.

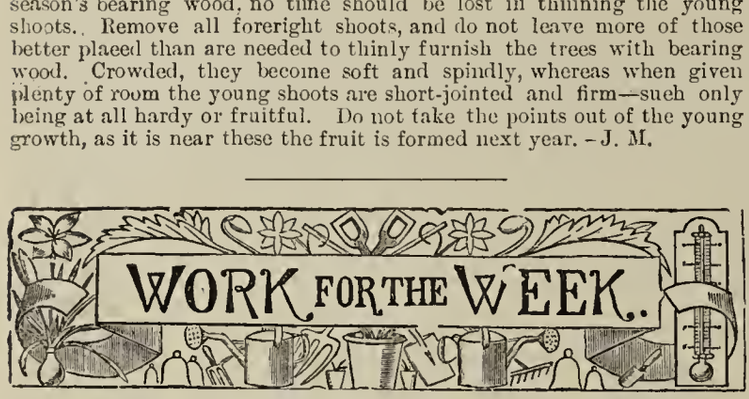
AT no period of the year is there a better display of the plants grown for their floral beauty than this. Abundance of flowers is everywhere secured, both indoors and out, and will continue so for weeks to come. It is with indoor plants that these notes are confined to, and if a show is desired, whether for conservatory or for house decoration, there is ample variety and colour to please the eye, and no lack of plants to select from. Only a few of the many will be noted here, but these are popular and good, and scarcely require any further recommendation. In the stove the beautiful Stephanotis will at once attract notice by its perfume, and on account of its usefulness should be grown by everyone. Allamanda Hendersoni covered with rich amber flowers is always admired. Another good plant is Tabernæmontana coronaria fl.-pl., its white flowers being so well adapted for buttonholes. In the intermediate house Bougainvillea glabra thrives well, and at this season is at its best. It can be cut freely and repeatedly. Gloxinias are very effective, whether grouped or mixed with graceful foliage plants. Caladiums mixed with them make a splendid show. A good plant is Impatiens Hawkeri, of strong habit ; its dark magenta flowers render it very conspicuous.

Turning to the greenhouse abundance of flowers can be seen, first being the Carnation Souvenir de la Malmaison in 8 or 10-inch pots, with that number of blooms blush pink and sweetly scented. Primula obconica, which appears to be an almost perpetual flowerer, commands attention ; it should be grown in every garden, it is so useful for cutting and decoration, the trusses being thrown up well above the foliage. The dwarf Begonia weltonieusis, with its pink small flowers, is very pretty, and having a prolonged flowering season becomes valuable. Fuchsias and Roses also help to make the house gay. The attractive show and decorative Pelargoniums, with endless varieties and shades of colour, are now fine. Amongst them may be noticed Duchess of Bedford, white, old, but good ; Madame Thibaut, white suffused with rose, good trusses ; Kingston Beauty, an old favourite ; Prince of Wales, Dr. André, and Beauty of Oxton. Zonal Pelargoniums are useful, and some of the best varieties are the following—Singles : Niphetos, white, very good ; Aspasia, white pips, rounder than the former ; Miss Hamilton, blush ; Mrs. James Gibson, light salmon ; Zelia, magenta, fine trusses ; Eurydice, lilac pink, white eye ; Métis, dark scarlet, white eye ; Henry Jacoby, dark red, one of the best grown ; International, blush, fine pips and trusses. Doubles : Circe, maroon, good ; Mrs. A. Saltby, rosy pink ; Pallas, salmon, flaked ; Guillion Mangilli, magenta, a free flowering variety ; and Wonderful, vermilion, useful and free.—F. S. W.

TRAINED CURRANT AND GOOSEBERRY BUSHES.—Where these are trained against walls or trellises the lateral growth ought to be thinned, and all shoots reserved be stopped to a length of about 6 inches. This will insure thorough ripening, and which is necessary whether the fruit is to be used early or is to be eventually matted up and kept as long as possible. Currant trees generally may also be somewhat similarly treated with advantage, but any growths required for furnishing fresh bearing wood ought to be lightly stopped only. The under side shoots on the Gooseberry bushes may be cut away now and the rest merely thinned where crowded.—M. S.

FIGS OUT OF DOORS.—Both standards and trees against walls have more abundant fruits than has been the case for many years. If all are left on the trees none will attain either their full size or quality, and thinning should at once be resorted to. The least that can be done is to remove all the fruits between the wood and the walls, or any pressing

against nails, but where very plentiful one-half of those better placed may be pulled off with advantage. It being of great importance that as much sunshine and air as possible shall reach both the fruit and next season's bearing wood, no time should be lost in thinning the young shoots. Remove all foreright shoots, and do not leave more of those better placed than are needed to thinly furnish the trees with bearing wood. Crowded, they become soft and spindly, whereas when given plenty of room the young shoots are short-jointed and firm—such only being at all hardy or fruitful. Do not take the points out of the young growth, as it is near these the fruit is formed next year.—J. M.



KITCHEN GARDEN.

The Latest Peas.—Peas are common in September, but more scarce in October, and rare in November, but they might be gathered in all cases in October, and in many instances in November, if the seed was sown to produce plants that would bear at these times. As a rule the latest Peas are sown too soon, and they pod and become old before the season can be called late; but when they are secured very late they are much valued, and are always good in flavour. As early crops are cleared off plenty of space will be vacant for Peas, and a good sowing should be made now. Give them moderately rich soil and a warm sunny situation. Do not sow early varieties under the impression that they will do better than the late sorts. This is not an uncommon mistake. The late varieties are the best, and Sutton's Latest of All is a useful variety. Laxton's Omega and Ne Plus Ultra are also useful, but the latter grows too tall to suit small gardens. In the autumn it sometimes runs up to 8 feet in height, and shades everything near it. It is often a difficult matter to find stakes for it, but the other two will do with stakes 3 feet in height.

Early Potatoes for Seed.—The majority of growers save some tubers for seed, but unfortunately these are not always the best. No Potatoes are ripe yet, but often some of the smaller tubers are put aside at this season to keep for seed, and being unripe they do not answer the purpose well. We approve of saving seed, but the rows or part of rows intended to furnish tubers for this purpose should be left alone until the haulms have become brown and withered from maturity. The tubers are then firm and sound and capable of giving the best results next year. Many poor crops of Potatoes may be traced to planting badly ripened seed, and it deserves the most careful attention.

Wire Netting as a Support for Peas.—Many Peas are attaining unusual height this summer. Those who are trusting to secure good crops without the aid of some kind of supports will be disappointed, as when the stems fall over the pods beneath are away from the heat and light rarely fill well. Many of them fail altogether, and where stakes are not obtainable wire netting is a good substitute. It may be bought in rolls of the usual length, and in 4 feet widths. The meshes are 4 inches, and it is very strong. It will last for many years if taken in and kept under cover when not in use. The other day a correspondent informed us that it did not answer with him. He had put one row of it along the centre of his Peas and they fell away on each side, but if the netting had been placed along each side of the row and supported with sticks at intervals every branch of the Peas would have been kept in.

FRUIT FORCING.

Vines.—*Early Houses.—Red Spider.*—It is hardly possible in early forcing to escape attacks of red spider. More especially is this the case when the Grapes are kept for any length of time upon the Vines after being ripe. On account of the liability of Vines to attacks of red spider irrespective of the debilitation attending the consecutive yearly forcing of the Vines, we do not advise large houses with a mixed assemblage of Vines for early forcing, but structures only of such size as will admit of a supply of Grapes for the establishment or particular purpose for a period of six weeks. This admits of the foliage being afterwards cleansed with water from the syringe or engine; but with a house having Sweetwater, Frontignan, and Hamburgh Grapes ripe in May, Muscats in June, and late sorts in July, the dry air essential to the ripening of early varieties will cause red spider to increase upon the foliage of the Muscats and other late sorts before they are ripe. This is most disastrous to present and future crops of Grapes. Instead of having a mixed collection of Grapes that started in December to the new year will afford fruit from May to August, we should divide the house into two or three compartments, so that the respective varieties may have their proper treatment secured to them. In case of an attack of red spider paint the hot-water pipes with sulphur brought to the consistency of cream with skim milk, applying it thinly with a brush when the pipes are heated to near boiling point, continuing the heat in the pipes for about an hour, then allowing the pipes to go gradually cool. The sulphur fumes will destroy the red spider, and often cause brown spots upon the skin of Muscat and Frontignan Grapes; sulphur therefore, must be applied to heated surfaces with great care and judgment. Black Grapes are not so readily affected by the sulphur as the white varieties.

Late Houses.—Late Grapes intended to hang or keep through the winter must have a final thinning, removing the smallest berries, and where too crowded allow every berry retained full space for development. Late Grapes should be more severely thinned than early and mid-season ones, leaving sufficient berries to form symmetrical bunches having a good appearance when dished. The recent rains have been sufficient for some time, and with mulching ample nutriment will have been washed into the soil. Inside borders should be kept well supplied with rain water, previously mulching with short stable manure, but not a quantity all at once, as the ammonia arising from fresh horse manure will have a disastrous effect upon the foliage and tender skins of the Grapes. Ammonia vapour is unquestionably useful, but requires to be furnished judiciously. As the period when scalding occurs is at hand, we would repeat our advice to guard against it by increased night temperature and abundant ventilation, so as to reduce the atmospheric moisture until the critical stage is passed. After then fire heat may be economised by closing early to admit of the sun raising the temperature to 90° or 95° on fine afternoons. Regulate the young growths as required, adopting the extension rather than the restrictive system where there is room for it without crowding, keeping all gross laterals stopped so as to cause an equal flow of the sap throughout the Vines.

Young Vines.—Those of this season's planting should, provided the light is not too much obstructed, be allowed to grow unchecked, it being presumed that they will be cut back to the bottom of the trellis, or to three or four eyes at the winter pruning. Supernumeraries intended for next year's fruiting may be regularly stopped at a length of 7 or 8 feet, removing the laterals from the buds intended to give fruit next year, preserving the old leaves, and as the wood will require thorough ripening, a free circulation of air will be necessary, with fire heat if the weather be cold and wet. Vines in pots intended for fruiting next season should by this time have completed their growth, especially those required for early forcing, and may be exposed freely to light and sun to thoroughly ripen the wood and the buds.

Figs.—Those ripening the fruit must have a circulation constantly of dry warm air, which can be secured at this time of year without resorting to artificial heat except in dull cold weather. Second crops will be advanced in size, and if the fruits are too numerous they must be thinned if the trees are expected to afford early fruits next season. Attend to stopping and tying in the shoots, guarding against overcrowding, watering the borders copiously, especially those of limited area, syringing forcibly twice a day to keep them in check.

Trees in Pots.—Do not neglect to syringe trees in pots intended for early forcing next season at least once a day, in hot weather twice, affording liquid manure at the roots, and pinching to induce fruitfulness in young plants. Stopping must be regulated by the vigour of the plants. Vigorous growers will need to be more closely pinched than those of moderate growth. Such varieties as Early Violet, Early Prolific, Black Ischia, Œil de Perdrix, and White Marseilles are of good habit and do not require such close stopping as Angélique, Brown Turkey, and others of more vigorous habit. It is important that the trees have plenty of light, are not crowded, and are well ventilated to solidify the growth as it is made.

Figs in Unheated Houses.—The best results attend trees with the roots restricted to borders of about one-third the width of the trellis the trees are to cover; well drained and formed of good loam, with a fifth of old mortar rubbish and a sixth of road scrapings, well incorporated and made firm. Surface-mulching and watering with liquid manure will ensure fine fruits of this much neglected but delicious fruit. The trees must have unobstructed light; the nearer the shoots are to the glass, only the foliage does not touch, the better. The best variety unquestionably is Brown Turkey. Train the growths thinly and on the extension system, stopping shoots available for laying in as spurs at the fifth or sixth joint, but avoid overcrowding. Syringe well to keep down red spider, especially at closing time—*i.e.*, in the afternoon, when the temperature is between 80° and 85°, so as to run up to 90° or more, providing a little ventilation before night, so as to allow the pent-up moisture to escape. Increase the ventilation from 75° in the morning, and keep through the day at 80° to 85°. Grand fruit will be had in August and onwards. The only precaution necessary is to afford a free circulation day and night after the fruit commences ripening, and to not supply water excessively, but afford needful supplies to keep the foliage healthy, mulching with short dry litter to prevent moisture unduly rising, and to lessen the necessity for water.

Cucumbers.—Repot the plants for autumn fruiting, pinching out the growing point beyond the second rough leaf of those intended for frames, and complete the preparation of the dung for affording bottom heat. Those intended for trellises should not be stopped, but trained upright, securing them to a small stick, and rubbing off the laterals as they appear to the height required to reach the trellis. Get the soil ready—good fibrous loam, with a fifth of fresh horse manure, and a fourth to a sixth of old mortar rubbish, according to the presence of grit in the loam, well incorporated, form a suitable compost. The house must be thoroughly cleansed after the old plants and soil have been removed. Although fire heat at this time of year in bright weather is unnecessary, yet in a prolonged period of damp dull weather the nights are cold, and the low temperature causes the fruits to become yellow, stunted, and curled, with canker at the collar of the plants and mildew

on the foliage. In such weather employ fire heat by night, and day also if cold. Against mildew flowers of sulphur dusted freely about the foliage is an infallible remedy, and against canker there is nothing better than rubbing the infested parts until dry with freshly slaked lime. Upon a return to bright weather after a dull period, shade from bright sun to prevent flagging, which if allowed wastes the energies of the plants, resulting in ill-shaped stunted fruits, and offers a strong inducement to red spider. In pits and frames the growths must be regularly looked over, cutting out those that are exhausted, training and earthing the plants as may be required, sprinkling the foliage at about four o'clock. In dull periods keep the beds well lined, and admit air constantly by tilting the lights a little at back. Keep the growths fairly thin, aiming at a supply of young growths to supplant the exhausted, which should be cut out, stopping one or two joints beyond the fruit. Ventilate early, just a little to allow of accumulated moisture escaping, increasing the ventilation with the increased temperature, but keeping them through the day at 80° to 85° or 90°, closing sufficiently early to insure the temperature rising to 90° or 95°. Shade only to prevent flagging. If aphides appear fumigate on two or three consecutive evenings moderately in preference to once strongly, which often seriously injures the foliage.

CHERRY HOUSE.—After the fruit is gathered the chief object is to secure the swelling or development of the buds by keeping the foliage clear of every description of insect pest, syringing abundantly, and if necessary apply an insecticide, as it is of the greatest importance that the foliage be kept clean and healthy. Although less moisture is necessary than when the fruit is swelling, yet it is necessary that there be sufficient moisture at the roots to maintain the trees in a healthy state. Trees in pots from which the fruits are gathered may be placed outdoors in the full sun, plunging the pots in ashes. Water as required to keep the soil moist, and syringe in the evening of hot days.

MELONS.—Successional plants should be earthed up as soon as the roots show at the sides of the ridges or hillocks, making the soil firm, being careful that the plants do not suffer from insufficient water, and on the other hand see that the soil is not too wet. To plants swelling their fruit supply weak liquid manure. Maintain a bottom heat of 80° to 85° for young plants, 90° with a moist atmosphere to growing crops, syringing freely except when the fruit is setting or ripening, being careful not to allow one or two fruits to take the lead, but have them all as nearly as possible of one size on a plant.

Plant without much further delay in the Melon house for producing fruit in late September or early October. Sow seed in about a week to raise plants to ripen a crop of fruit in November. In Melon houses artificial heat may now be dispensed with, except when dull cold weather prevails when the fruit is setting or ripening. Syringe growing crops freely in the afternoon at about 4 P.M. or earlier, allowing the temperature to rise, but not above 90° or 95° after closing. Afford a plentiful supply of water at the roots, when shading of the foliage will seldom be needed.

The latest plants in pits or frames will now be far advanced to setting their fruits, it being important that the fruit be set in July, or for the latest supply of fruit from frames by early August to allow time for its swelling and ripening. Give a good watering before the flowers open, line the sides of the beds with some hot dung or short grass, and leave the lights open about three-quarters of an inch constantly at the back until the fruit is set and commences swelling, then keep the growths well stopped, maintain a warm moist atmosphere by early closing with sun heat, sprinkling the foliage, and water about twice a week in bright weather or once in dull.

PEACHES AND NECTARINES.—*Succession Houses.*—With the fruit advanced towards ripening observe a course of cleanly culture. Give the border inside a thorough supply of water, and mulch with short but not rich litter. Keep the fruit with its apex up to the light, drawing the leaves aside or shortening them so as to colour it equally, but most, if anywhere, at the upper part, as it will appear that way when dished. The laterals should be well pinched, and the shoots tied in so as to keep them clear of the fruit. Ventilate freely, especially in the early part of the day, leaving a little ventilation constantly at the upper part of the house. Syringe well until the fruit commences softening, but even then damp the border in the morning and afternoon, as excessive evaporation is certain to result in red spider and thrips.

Later Houses.—The recent rains have thoroughly moistened the soil of outside borders to the drainage, and inside will be in a favourable condition for the swelling of the fruit from wet days being taken advantage of to thoroughly soak them with rain water or liquid manure. The shoots should be tied down as they advance, not crowding them, but allowing each space for the exposure of its foliage to light and air. Stop the laterals at the first joint, and to each succeeding one as made; cut back gross shoots or remove them altogether. Ventilate early and freely, and close early with plenty of moisture in the house, and admit a little air at the top before nightfall so as to allow the pent-up moisture to escape, and permit the atmosphere to gradually cool, so as to give the trees rest. Syringe forcibly twice a day, but not in dull weather, as it is necessary the foliage be fairly dry before nightfall and not kept constantly dripping with moisture. If necessary apply an insecticide, as under no circumstances must red spider, thrips, or aphides be allowed to make headway. Mulch the borders with some partially decayed manure—lumpy rather than such as when wet will form a soapy mass.

THE BEE-KEEPER.

NOTES ON BEES.

THE WEATHER.

WE have had within the past twenty years seasons with even less honey than the present one, but none approached the present one for cold and ungenial weather. No night temperature during the summer here has been above 45° Fahr. June ended and July began with a night temperature of 32°, and has been seldom much above that. We have had an almost continuous east or north or north-east wind for months, and for weeks a withering drought under a cloudless sky by day, and chilling winds with a leaden sky at night; vegetation made little or no progress. That, combined with the paucity of birds, through the eggs or fledglings being destroyed by cold, or by being robbed, allowed the caterpillars to make sad havoc with the foliage and fruit, completing the destruction that the high winds began upon the immature and tender foliage. For a week past copious rains have fallen which have had a beneficial effect on crops in general. While we have no control over the weather, we have over the birds, the husbandman's best friend, even though they do partake of a little of what they were the means of preserving.

The inclemency of the season has had a telling effect upon bees. In some districts many stocks have perished, and in most cases hives are no further advanced now than they were in the beginning of May. Swarming commenced here before the beginning of May, and others as far advanced but not swarmed are standing still. Thousands of bees are lying about chilled and dead, not so much from cold as from the chilly air, even with a temperature of 55°. Why bees can stand a low temperature of 45° at one season with impunity and fall dead at another with a much higher temperature is mysterious. The prospects of the season with bees is not altogether blasted. A favourable change has come, and ten days or so will give an abundant harvest of honey from the Clover. Strong hives, however, or doubled swarms with a short season, are the only ones to be relied upon to yield profit to the bee-keeper. Small hives are still recommended by some to be most profitable in districts having a paucity of bee flowers, but it would be quite as ridiculous to say that poor soil should not be cultivated if you expect good crops. It does not matter what the district is, the hive should be of the largest dimensions and to be full of bees at the time honey is most abundant. We have had only some six days this year that bees carried in excess of their daily wants, yet a number of my hives have their supers nearly finished, and several Stewartons with two supers on are lying out. More will be added the moment honey begins to flow, and swarms, although late, will be large, and gather more than lying out or hives bent on swarming, and two joined will excel any other system.

RAISING QUEENS.

This has been delayed through stress of weather and disappointment with stock queens bought, as Benton's first grade, which have proved themselves to be complete mongrels, while I have positive proof that the dealer who supplied these had not a single queen from Benton. We have heard much about foreign bees being unsatisfactory, and that Carniolian bees were scarcely distinguishable from the native blacks. The latter statement is misleading, because there is a great difference in the appearance and habits of the Carniolian bees from the native ones, and shows that some persons have never had experience with the true breed of that excellent and docile race of bees, while in the former case, if mongrels have been supplied instead of the pure breed, explains thoroughly the cause of failure.

At a late date, but early enough for the season, I have young queens coming forward that will be introduced in a few days to suitable stocks, which along with others will be removed at the

end of the month to the moors, where the honey from the mountain flora is finer than any produced from the plains.

As many private letters reach me regarding hives, I will at an early date give some further information as to making, working, and moving, which I hope will be instructive and remunerative to all who follow the advice of—A Lanarkshire Bee-keeper.

THE HEATHER HARVEST—GLASS SECTIONS—INVENTIONS.

A Bee-keeper asked in another journal for information regarding the Heather harvest, and in replying to this a writer concluded by stating that 200 sections of Heather honey from one hive could be harvested and sold at 2s. each wholesale. The sequel has just come to light. It appears in a district on the borders of Hallamshire a large number of bee-keepers attempted to carry out the instructions, tempted by the bait of £20 per hive, and went to great expense in carrying them out, with the result that at the end of the season one of them says, "A solemn company of men might have been seen accompanying their hives on their return journey" without honey in the sections, and all their hopes ruined. It is still said the 200 sections from one hive was not an exaggeration as "A Prominent Scotch Bee-keeper" succeeded in getting that amount. But this "Prominent Scotch Bee-keeper" did not report getting this amount of Heather honey from one hive. He reported over 200 lbs. for the whole season, about 60 lbs. only of which was Heather honey.

There are thousands of tons of honey annually lost on the moors for want of bees to collect it. The bees are in existence, and it would pay well to migrate them from various parts of the country if they were only in proper hives; yet the Royal Agricultural Society of England have in my opinion excluded every hive from competing at the coming Nottingham Show capable of being safely carried to the moors and back with profit. They have set up a particular type as the standard in every class, which, in my view, is a wrong one for migratory purposes.

Some time ago "Felix" tried to contend "that it was of no practical importance to bee-keepers who discovered or invented the different things in use, so long as they had the use of them," but subsequently said he should honour or thank those who had directed him right as soon as he had tested the matter.

I have been for eight years studying out something which, when published and understood by the public, will revolutionise the present mode of bee culture. One part is to make sections wholly of glass—waste pieces from the glass warehouses called "cullets," to be had for 2s. 6d. per cwt. A hundredweight will make 500 pound sections, and an ordinary girl, with tools costing only 2s., can cut them up into sizes which can be made into true, rigid, rectangular sections, with foundation fixed, much quicker than the wooden one-piece section can. Now shall I explain the whole thing, and run the risk of being deprived of the credit of my inventions; or what shall I do?—A Hallamshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Grubs in Soil (*Thomas O.*).—The contents of the boxes shall be examined and a reply given after the investigation. We are now preparing for press.

Wiring Walls (*W. B.*).—Your letter shall have attention; it cannot be satisfactorily answered this week, as our pages are almost ready for printing.

Jones' Terminal Saddle Boiler (*W. Lambourn*).—We are unable to answer your question relative to this particular boiler, but terminal saddle boilers are included in the illustrated catalogue of the Thames Bank Iron Company, Upper Ground Street, London, S.E.

Gas Tar and Fruit Trees (*J. S. O.*).—Painting the stems with gas tar is the cause of deaths among your Apple trees, and of injury to the Pear trees. It is violently poisonous to them, and the poisonous constituent probably is the creosote.

Thinning Grapes (*A.*).—Cut off one of the bunches from each shoot without any reservation. If one bunch is smaller than its fellow, cut off the smaller. If they are of equal size cut off that one which is furthest from the stem.

Tomatoes Diseased (*F. W.*).—We are just going to press. Cut off the diseased leaves and burn them; dust with sulphur: maintain a dry breezy atmosphere: use less stimulants. Some affected specimens have been sent to the Scientific Committee of the Royal Horticultural Society, and will probably be referred to in the report of the meeting.

Change in Establishment (*J. G.*).—We are very sorry to hear of the change and accord our sympathy, but under the circumstances think you cannot do better than make the best of the position, retaining your footing where you are till something better presents itself for your acceptance.

Gesnerias (*J. E.*).—Gesneria cinnabarina grows about 18 inches high, and the others you name are similar in height and habit. They are very beautiful when well grown, especially for flowering in a stove in the winter. Tubers can be procured from nurserymen, but so far as we know seed is not procurable.

Dipladenias (*J. Gibson*).—Your seedlings are worth preserving, though we have seen some similar to them, we think at Chatsworth. When you have good flowering plants ready, not necessarily large, you might send them to one of the meetings of the Royal Horticultural Society for examination by the Floral Committee.

Ivy Eaten by Cows (*Constant Reader*).—Ivy is not injurious to the health of cows, at least we have not known any mishap to arise from their eating it, and we have noticed it to prevail largely in hedgerows, on trees, and in woods to which cows have free access without their being in any way prejudiced. We cannot name Roses or other florists' flowers, as is stated below.

Red Spider on Cucumbers (*Cambridge*).—If on a trellis and the under sides of the leaves are frequently and forcibly syringed, the enemy can be so kept in check as to do little injury. After a few good drenchings mix some sulphur in the water, forming a cream that can be applied with a syringe, allowing the sulphur to remain on the leaves for a few days, shading in very hot weather, then repeat the drenching.

Manure for Azaleas (*Anxious*).—Chemical manure may safely be given to plants that are in need of support, but it is not advisable to continue furnishing it after the buds are set to plants that are vigorous, as it has a tendency to induce growth to push from the base of the buds and so interfere with their flowering satisfactorily. Applied to weakly plants it would assist them to swell the buds and retain the foliage, but it would be more injurious than beneficial applied to plants at this season.

Comparing Vegetables (*Philomel*).—When a very large collection of any kind of vegetable is grown, practically including all recognised varieties, it is surely not a difficult task to compare one with the other, or others that may be sent with either, and so determine the distinctness or dissimilarity of varieties in the most practical way. This has no connection with fruit, and there is no parallel between the cases cited, the principle involved being entirely different. If you strike out the word "new," which was obviously an accidental insertion, much of the difficulty you experience will be removed.

Cabbage and Onion for Early Use (*J. M.*).—One of the best Cabbages to sow about the middle of this month for spring use, according to our experience, is Ellam's Dwarf Early Spring. The Queen Onion is remarkable for the rapidity of its growth, which ripens before larger sorts. It, however, is a small Onion of symmetrical form and small top. Early White Naples is larger, of quick growth and mild flavour, a fine sort for autumn sowing, which should be about August 10th. 2, There is no work on the subject you name. The cultivation of Strawberries under glass has been fully treated of from time to time in our pages, and is repeatedly alluded to in "Work for the Week."

Garden Produce (*J. N. F.*).—As a rule it is not profitable to send small quantities of vegetables to Covent Garden salesmen. As you are within easy reach of London you had better pay a visit to some of the salesmen and explain to them the nature and quantity of the produce at disposal. You will then see for yourself the sizes of bunches of vegetables now, for they vary greatly, according to the size of the individual articles of which they are composed, and the season. It is not possible to give precise information on the subject that would be of avail for market purposes, and knowledge gained by personal inspection is highly desirable, if not imperative.

Budding Roses (*Kittie*).—Your own successful experience shows that Rose buds placed for a moment in the mouth of the operator, as a matter of convenience, has no ill effect. Countless thousands have been so moistened and afterwards "taken" well. It is not customary to shorten the stems of Briars when the budding is done, as a free unobstructed flow of sap is desirable, and shortening the shoots is calculated to give a temporary check at a critical time. We know quite well that

instances of success can be cited when the shoots have been cut back when buds were inserted, and it is certainly not necessary to place them in the mouth if they are not allowed to get unduly dry out of it; but the rule is as stated.

Fruit Growing and Bee-keeping (*D. D.*).—A gardener of great experience in Scotland who has been consulted on the subject of your letter sends the following reply:—"Glasgow is supplied almost exclusively from the Edinburgh district and the south. Fruit is somewhat extensively cultivated in the Lanark, Hamilton, and other districts, but these mostly by field culture. Rothesay or Dumbarton might be tried for a small piece of ground. Rents are low there, but exact figures cannot be stated, as the price varies according to the land and size of plots. Mid or East Lothian is the most suitable district, but there is great difficulty in getting ground, which moreover lets high, twenty to thirty miles from Edinburgh at from £5 to £12 per acre. The only method of learning would be to get employment with a good grower. Local inquiry would let your correspondent know more than it is possible to state here; but unless he wishes to cover his ground with glass two or three acres will not be sufficient to make a living out of as things go at present." With this last observation we fully agree, and also concur in the advice to seek information in the districts alluded to.

Sowing Ferns (*F. S.*).—Several of the finest Ferns cannot be increased by division; or, if they can, several years elapse. If right means are followed, they may be raised from spores. This requires a constantly humid warm atmosphere, and little, if any, sunshine. Procure a wide earthen pan, a hand or bell-glass that will go within it and rest on the bottom, and a shallow wide pot that will stand within the glass and above the rim of the pan 2 inches or 3 inches. Fill this pot half full of potsherds, and upon them a sufficient number of small pieces of turfy peat, mixed with small pieces of sandstone, about the size of peas, to come up to the pot. Then take the frond of any Fern that is full of spores or seeds, and, with the hand, brush them off upon the prepared pot, set it in the pan, place the glass over the pot, and fill the pan nearly with water. Place the whole in the warmest part of the stove, shading it from the sun. The small pieces of turf and stone can be easily separated, and the seedlings on each put into small pots, without any danger of destroying them by the process of potting. In the moist atmosphere of the Orchid house several species of Fern will come up spontaneously in the pots, baskets, and upon the blocks. These may be carefully detached as soon as they are large enough, and potted in small pots, placed for a time in a shady situation, and they will soon make nice bushy plants. Ferns require a light open soil. A compost of sandy fibrous peat two parts, turfy loam one part, and leaf mould one part, with a free admixture of sand, will suit them well.

Peach and Nectarine Shoots Gummed (*E. H.*).—Gum occurs most frequently and is greatly encouraged, if not induced, by too rich soil, over-manuring, or too liberal supplies of liquid manure. It is a consequence of over-luxuriance, a flow of crude sap disproportionate to the power of elaboration and assimilation. It may be caused practically by a check to the circulation of the sap consequent on disbudding, or a dull cold period in the early stages of growth when the sap is torpid, followed by a warm moist one favourable to rapid growth without the correspouding increased power of assimilation—conditions productive of tissue favourable to the fungus, Coryneum Beijerinecki; indeed it is questionable if the disease attack other than trees with imperfectly assimilated sap. Plowright states that "the fungus cannot penetrate the bark, abrasion or laceration being necessary before the germ tubes can enter." Hence the predisposing causes require careful consideration, and unless over-luxuriance, the sap being in excess of the power of assimilation by the foliage, young wood, and fruit, the reciprocal action of the roots with the head being discontinued, fungus, or its resulting gumming, does not occur. Lifting the trees and laying the roots nearer the surface in firm soil containing less organic and more inorganic matter is the only certain remedy. It is a good plan, however, to cut away the affected parts and burn them, and by stopping or removing gross growths, seeking an equal distribution of the sap or equality of vigour throughout the trees, with full exposure of the foliage to light and air, so as to insure thorough solidification of the growth. Sturdy short-jointed wood, thoroughly matured, is the chief object to attain, and this secured, gumming will not appear.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*A Young Hand*).—As has been dozens of times indicated, it is essential to know the character of the flowers, small or large, for naming Peaches and Nectarines; fresh and good leaves are also necessary, those sent round the fruit being inadequate.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*H. A.*)—1, Acrides crassifolium; 2, Dendrobium chrysanthum. (*G. W. C.*):—It is an excellent variety of Phalænopsis speciosa; the other plant is Rodriguezia planifolia. (*J. C. H.*).—1, Spiræa Aruncus; 2, Astrantia major; 3, Asphodelus luteus; 4, specimen too much withered; 5, Iris siberica. (*S. T. R.*):—1, Russelia juncea; 2, Gypsophila paniculata. (*J. J.*).—1, Dendrobium chrysanthum; 2, Lilium Martagon; 3, Veronica teucrium latifolia; 4, Campanula glomerata; 5, Thalictrum aquilegifolium. (*Herefordian*).—Lælia purpurata.

COVENT GARDEN MARKET.—JULY 11TH.

MARKET quiet. No alteration in prices.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	0	0	to	0	0	Oranges, per 100	4	0	to	9	0
Nova Scotia and Canada barrel	0	0		0	0	Peaches, dozen	6	0		12	0
Cobs, 100 lbs.	0	0		0	0	Pears, dozen	0	0		0	0
Grapes, per lb.	1	6		3	6	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	0	6		1	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Musbrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	6		0	0	Mustard and Cress, punb.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	2	0		4	0	Mignonette, 12 bunches	3	0		6	0
Asters, French, per bunch	2	0		3	0	Pansies, 12 bchs	1	0		4	0
Azalea, 12 sprays	0	0		0	0	Pelargoniums, 12 trusses	0	6		1	0
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	4		0	6
Calceolaria, 12 bunches	4	0		6	0	Pinks, varions, 12 bunches	2	0		6	0
Camellias, 12 blooms	0	0		0	0	Polyanthus, 12 bchs	0	0		0	0
Carnations, 12 blooms	1	0		3	0	Pyrethrum, doz. bunches	3	0		6	0
,, 12 bunches	4	0		8	0	Roses, Red, 12 blooms	1	6		2	0
Cornflower, 12 bunches	1	6		3	0	,, (ontdoor), 12 bchs	4	0		12	0
Daisies, 12 bunches	2	0		4	0	,, (indoor), dozen	0	6		1	0
Delphinium, 12 bunches	2	0		4	0	,, Tea, dozen	1	0		2	0
Epiphyllum, 12 blooms	0	0		0	0	,, yellow	2	0		4	0
Eucharis, dozen	3	0		6	0	,, (Moss), 12 bunches	6	0		12	0
Gardenias, 12 blooms	1	6		4	0	Spiræa, bunch	0	6		1	0
Iris, 12 bunches	6	0		9	0	Stephanotis, 12 sprays	1	6		3	0
Lapageria, coloured, 12 blooms	1	0		1	6	Stocks, 12 bunches	1	6		4	0
Lilium candidum, French, per bunch	1	0		3	0	Sweet Peas, dozen	3	0		6	0
,, English 12 blooms	1	0		1	6	Sweet Sultan, 12 bunches	6	0		8	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tropæolum, 12 bunches	1	0		2	0
						Tuberoses, 12 blooms	0	6		1	0
						White Gladiolus, 12 sprays	0	9		1	6
						White Lilac, per bunch	0	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen pots	4	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	0	0		0	0
Bedding out plants in variety, per dozen	1	0		2	0	Heliotrope, dozen pots	4	0		8	0
Calceolaria, per dozen	4	0		9	0	Ivy Geranium	3	0		6	0
Cineraria, dozen	0	0		0	0	Hydrangea, dozen	9	0		18	0
Coleus, dozen	3	0		6	0	Lilies Valley, dozen	0	0		0	0
Crassula, dozen	18	0		30	0	Lilium Harrissii, doz. pots	18	0		30	0
Dentzia, per dozen	0	0		0	0	Lobelia, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	6	0		12	0
,, viridis, dozen	12	0		24	0	Mignonette, per dozen	4	0		8	0
Erica, various, dozen	9	0		18	0	Musk, dozen pots	2	0		4	0
,, ventricosa	18	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	3	0		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	6	0		18	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0
Foliage Plants, var., each	2	0		10	0	Spiræa japonica, doz.	6	0		12	0
						Stocks, per dozen	3	0		6	0



AGRICULTURAL EXPERIMENTS.

WITHIN the last few days we have received reports of agricultural experiments now being made by Professor Jamieson in Sussex, by Dr. Voelcker and Mr. Carruthers at Woburn, by Mr, Martin J. Sutton at Dyson's Wood, by Sir John B. Lawes at Rothamstead, by Sir Thomas Acland at Killerton, and by the Manchester, Liverpool, and North Lancashire Agricultural Society at Saltney and Rostherne. Glad indeed are we to see in the last-named report that at Rostherne Lord Egerton is using a mixture of nitrogenous and mineral manures at the rate of 3 cwt. per acre, consisting of quarter cwt. nitrate of potash, 1 cwt. nitrate of soda.

quarter cwt. steamed bones, and 1½ cwt. superphosphate. This is clearly a step in the right direction, but it will be found advantageous to use muriate of potash instead of the expensive nitrate, and to use twice the quantity if the Clovers are weak.

As a practical outcome of all these experiments we hope soon to hear of real work far beyond the scope of mere trial plots. Often have we told our readers how we put chemical manures, farmyard manure, and sheep-folding fully to the test upon grass land laid in for hay, and in reclaiming poor pasture. We thus proved that sheep-folding and well chosen chemical manures were alike profitable, and that farmyard manure was comparatively unprofitable.

The matter has long ago passed from the vexatious vagueness of mere opinion to the safe ground of positive fact, yet we still find the advocates of muck proclaiming it as being altogether superior to artificial manure. So it is undoubtedly superior to much of the rubbish which has been foisted upon farmers in the guise of special mixtures for special crops by plausible dealers. What we want farmers now to see in their own interest, what the experiments are intended to make clear, is the important fact that pure chemical manures can, by the aid of science, be made to store the soil with plant food as fully, and far more economically, than ever can be done with the very best farmyard manure. But there are serious obstacles in the way of the diffusion of such knowledge. Long-established custom, combined with ignorance and prejudice, are only to be overcome by the tangible proof of profitable results, and until reports of experiments take a more positive tone very little good is likely to be done by them. The North Lancashire Report justly observes that it is tedious to arrive at the truth, especially in agricultural matters. With equal justice Mr. Martin J. Sutton said at Dyson's Wood that the results of his experiments were hardly applicable to the country at large.

What is wanted now is for private enterprise to apply what knowledge has been gained by the experiments, and we are glad to know that this is being done more extensively than is generally supposed. We only hope to hear much more than we have done of results. In Sussex, Major Sergison has done good work in the manner desired, notably in Wheat culture. Seven years ago he took over from a tenant some land pretty well farmed out; by thorough cultivation and the use of pure chemical manures he obtained a fair crop of Wheat the first season. It was, in point of fact, so good that he mentioned it at a local agricultural show dinner, and in response to the challenge that he could not do it again, he has continued growing Wheat upon the same field ever since, applying Professor Jamieson's mixture, or rather chemical manures mixed at the farm according to his formula, and now he is able to show a better crop of Wheat than he had at first. This is quite in accordance with our own experience, and we may here notify our intention to sow Wheat and Barley upon the same land at each of our farms every year. It is a notable fact that there is frequently a wide difference in the soil of a farm. For example, we have a heavy land farm with some 40 or 50 acres of excellent mixed soil, admirably adapted for Barley. We have a flourishing crop of Barley upon that part of the farm this year, and have told the bailiff to devote that land constantly to the same crop, just as he is to continue growing Wheat and Beans upon the heavier land. Now, when we took over this farm we found the Barley land just laid down to permanent pasture, while the poor heavy land was under corn, and we had to reverse this order, or rather disorder of things—to lay down the land which did not answer to keep under the plough, and break up that which did. To grow two white straw crops in succession upon the same land, to sell straw off the farm, to continue cropping without a long fallow, to use artificial manures instead of muck, was generally condemned at one time, and is considered not only wrong but ruinous by farmers of the old school. All this, however, will come right, only "it is tedious to arrive at the truth," and when we have it is still more tedious to induce others to believe.

WORK ON THE HOME FARM.

Haymaking is now in full swing, and we long for a change to settled weather, as otherwise the work will prove both tedious and expensive. So far we have kept the mowing machines at work even in showery weather, for the grass sustains no harm for a few days after it is mown if left unturned, and by keeping the tedding machines briskly at work in fine weather, and following with the horse rakes and putting the hay into cocks good hay can be made. We could not well wait longer, for the early grasses were in seed, some of them approaching ripeness, but the showery weather induced so strong a growth in the late grasses that by the exercise of watchfulness and care we hope to have good hay. On the whole the crop is certainly more abundant than it was last year, yet generally there has been such a scarcity of sheep feed that both pasture and layers have been fed off closely, and hay should be dear next winter. But this is by no means certain. If Maize and Oats continue so low in price, they tend to keep down hay; at any rate, it was so last winter. We shall have one or two air shafts in each large hayrick, as fermentation is apt to be excessive in showery weather, and the rick cloths will be drawn up off the hay as early in the morning as the weather admits of.

The growth of Clovers and Grasses is an interesting study at this season of the year. No doubt the finer Grasses impart a tempting appearance to hay, but for bulk of crop combined with quality we certainly are bound to give preference to Cocksfoot, Rye Grass, and other Grasses of exceptionally robust growth. There is such a thing as over-refinement in permanent pasture, especially upon poor land. We like big hayricks, and under good cultivation such Grasses as we mention go far to ensure them. If the hay is coarse in texture it is palatable enough, and if sheep or horses will not eat in one form they will in another. Certainly such hay compares favourably with that from many an old pasture, where the herbage often consists of indigenous Grasses, and is very poor in quality. For temporary layers of three or four years' duration very heavy crops of most excellent fodder are had by the judicious sowing of strong-growing Grasses and Clovers.

OUR LETTER BOX.

Treatment of Cows Before Calving (*A. B.*).—You appear to share the common but erroneous opinion that a pregnant cow should be low in condition. On the contrary, it should rather be in as full lusty a condition as is possible short of fatness, for not only has it to supply nourishment to the calf before birth, but also to yield a full flow of milk after calving. Certainly a full dietary of good grass now, for a cow expected to calve at the end of the present month, is highly desirable. Here are a few simple rules for your guidance:—Let milking cease entirely six weeks before calving. Manage this by milking once a day for a while, and then once in two days. If this is done with care all risk of a loss of quarters is avoided. Avoid systems of semi-starvation, by which cows are rendered weak and low in condition at the time of calving. Rather let them have more sustenance, in order that they may produce a fine calf, and a full rich yield of milk subsequently. Do not, however, change suddenly from a low to a high diet or you may induce milk fever. It is unnecessary to interfere in ordinary cases of calving; it is only in protracted labour or false presentations that help is required in the manner mentioned by you. After the calving give the cow a warm—not hot—mash, and let the drinking water be slightly warm. A few hours after calving a pound of Epsom salts and two drachms of ginger may be given as a safety drink. Inflammation of the udder may generally be prevented by allowing the calf to remain with the cow and suck when it pleases. In all cases of danger or difficulty a veterinary surgeon should at once be called in.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. July.		9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature In sun.	IN THE DAY. Radiation Temperature On grass	Rain.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	1	30.035	54.9	44.4	N.W.	58.0	75.9	44.4	108.6	41.6	0.016
Monday	2	29.999	56.4	51.5	S.	58.2	69.4	52.1	75.6	48.3	0.572
Tuesday ...	3	29.585	59.9	55.6	S.W.	57.2	69.6	54.6	120.2	53.4	0.040
Wednesday ..	4	29.514	59.4	55.6	S.W.	57.7	65.9	56.8	112.2	49.4	0.055
Thursday	5	29.501	62.4	55.9	S.W.	57.8	66.8	54.6	112.8	57.9	0.360
Friday	6	29.643	58.6	51.3	W.	57.7	64.3	51.9	105.7	48.8	0.058
Saturday	7	29.956	54.3	52.3	N.	57.6	60.4	51.2	87.3	52.7	0.035
		29.748	58.0	53.9		57.7	66.3	52.2	102.9	49.2	1.126

REMARKS.

1st.—Generally fine, but not much sun.
2nd.—Rain nearly all day; short dry interval about 6 P.M.
3rd. Showery, especially in the afternoon; much wind.
4th.—Fair morning; shower with distant thunder at 1.30 P.M.; thundery again, with slight rain, from 2.15 P.M. to 3 P.M., otherwise fine and bright, with spots of rain about 5 P.M.
5th.—Bright early; heavy rain from 10.30 A.M. to noon, and from 2.50 P.M. to 3.10 P.M. frequent showers and thunder in afternoon and evening with occasional lightning.
6th.—Overcast all day, with heavy rain from 11 A.M to 11.30 A.M.
7th.—Dull, with occasional slight showers or drizzle.
Overcast rainy week, with low maximum temperatures.—G. J. SYMONS.

THE SEASON SO FAR.

IT is late, very late, and at the moment of writing the prospect is by no means exhilarating. A protracted winter retarded the blossoming of fruit trees, and as a consequence a golden harvest was expected in the autumn. But the blossom did not entirely escape injury by frost, and the fruit that set did not swell kindly. Much has vanished; and though some trees are laden here and there, many are barren, or nearly so, though why this should be so is perhaps in some cases a little mysterious. Some of the heaviest laden Apple trees we have seen are at Chiswick—trees grafted on Paradise stocks about ten years ago, and now forming a plantation, with just room enough for passing between the rows.* Cox's Orange Pippin, Duchess of Oldenburg, Stirling Castle, Small's Admirable, Braddick's Nonpareil, Lane's Prince Albert, and a few others are wreathed with fruit; but that usually free-bearing Apple, Cellini, has failed with a curious exception. There is a row of it, embracing several trees, but on the majority of them scarcely an Apple is to be seen, though two trees in this row are almost overweighted. How is this? Can Mr. Barron tell us? If he cannot no one can, and the circumstance must be regarded as a pomological puzzle.

The season, so far, has been remarkable for cold and caterpillars. These latter have hung in festoons on thousands of trees in the vicinity of the metropolis, ruining the hoped-for crops of fruit, for either the blossoms or the leaves, or both, were devoured. The Small Ermine and Winter Moths are increasing near towns. Why is this? Is it not to a large extent due to the absence of birds from the localities where their natural enemies—men, boys, and cats—are the most numerous? The greater the number of these in a given area, the less in number the birds must of necessity be, and, correlatively, the greater the increase of insects of various kinds. The world we live in is a delightful world without a doubt, full of wonders and of beauty; but all the same it is a savage world, the strong devouring the weak continually. If the birds are destroyed or driven away insects increase, and as these multiply vegetation suffers. If by artificial means, and the assumed necessities of life, the balance of Nature is destroyed, man must pay the penalty, because it is by his action that the deed is done. The impelling forces may be too powerful to resist in certain localities, as where town growth is as persistent as tree growth; but in rural districts is the economy of bird life sufficiently appreciated? As birds decrease caterpillars must increase, and there have been far too many of these; not near towns only, but in "Nature's solitudes" during the present year. Caterpillars have their parasites no doubt, but these appear inadequate for keeping the destructive horde of blossom and leaf-eaters within reasonable limits. The whole subject appears to be worth thinking about, and having introduced it we pass from the caterpillars to the cold.

At a flower show in Kent last week three of the judges were working in overcoats, and the fourth was shivering because he had been so thoughtless as to go out without one. It was the 11th of July, and he ought to have known better. But perhaps the judges were tender, some may imagine. Those who have the pleasure of being acquainted with Mr. John Fraser of Lea Bridge, Mr. John Laing of Forest Hill, and Mr. Ward of Leytonstone, will not regard them as tender exotics, but rather as being as hardy as Highlanders. Well, those were the judges working in overcoats on July 11th, 1888. The date is worth recording, as the day will not be forgotten in various districts of the country. As to the venturesome fourth man who left his outer garment at home, he suffered enough without being made to endure more by "naming" him, as they say in Parliament, when a member does something amiss.

Cold, however, as the day was in Kent it was colder elsewhere. Snow in the north, in places to the depth of 6 inches; snow in the midlands, hail in Surrey, and the thermometer registering within 4° of freezing at Heckfield in Hampshire. That is the record. A daily paper gives a concise digest of the "summer" weather:—

"The unseasonable weather recently experienced over England must surely have reached its culminating point. At eight o'clock in the morning of the day named the thermometer stood no higher than 44°, or considerably lower than any July reading on record for that particular hour of the day. Later in the day in London it rose to a maximum of 54°, a very respectable reading for a February afternoon, but a miserable level for July. The vicissitudes to which our climate occasionally exposes us have seldom been more strikingly exemplified than in the tremendous contrast which has existed between our recent weather and that of last summer. Comparing the meteorological records for the two seasons we find in the first place that the mean temperature of the past five weeks over England has been from 5° to 7° lower this year than it was during a similar period in 1887. Last year there were in London eighteen days in the course of the five weeks with a maximum temperature exceeding 75°, ten days with a maximum of over 80°, and two with a reading of over 85°. This year we have had during the same period only two days with a temperature above 75°, only one with a reading exceeding 80°, and none reaching 85°. The records of bright sunshine tell a still more remarkable tale, the aggregate amount of this very desirable element recorded during the present summer being less than half the amount registered last year. In our midland and southern districts, including London, the sunshine experienced during the past five weeks has not amounted to more than one-quarter of the possible quantity. Last year in the metropolis we had 53 per cent. of the possible amount, while in the midland counties they had 58 per cent., and in the eastern districts as much as 61 per cent. In the matter of rainfall the contrast between the two seasons has, of course, been exceedingly marked. During the early part of last summer a severe drought prevailed over the kingdom, and in the five-week period under review the total amount of rain experienced in London and over the home counties generally was less than a quarter of an inch. This year we have had in the same localities from 4 to 5 inches. Last season rain fell in London on three only out of the thirty-five days; this year it has fallen on as many as twenty-four."

That is a serious statement. It puts the weather prophets out of court, at least those of them who predicted a hot dry summer, one of the tropical "cycle" which had set in. The effects of the cold and wet are apparent. Rosarians are disappointed. Strawberry growers have entertained great loss. Hop growers are despondent. Farmers are grieving over the loss of hay and trembling in fear of a bad harvest. Gardeners are inconvenienced by the failure or lateness of fruit and the weeds that almost overwhelm them. Gardens and fields are green, too green, and even the root crops want heat for inciting free growth and early maturity, and if the rains do not cease soon the old enemy, the Potato disease, may again assert itself. As a rule late crops mean loss. There may be exceptions, but early harvests prove the rule, for they are almost invariably good while late ones are the reverse. It is much the same with garden crops, their value being usually in proportion to their earliness, though there are exceptions—in, for instance, late Grapes and Broccoli. But these are special. Cultivators cannot in a season like this have the crops ready for use at the usual time; but those who habitually start

early have the advantage over their brethren who are generally behindhand with their work. Some of them may be helpless to avoid this, while others may not be quick to see what must be done at a given time and what may wait ; then follows hesitation, and there are moments when the "man who hesitates is lost." We can only hope now that the winter is at last over and that summer may yet come and terminate in a brilliant autumn.

PRIZE GROUPS.

The tasteful arrangement of plants is a portion of a gardener's duties now much in request, for never have plants been so extensively and generally employed for decorative purposes as within the past ten years. The classes provided at the principal horticultural shows throughout the country for groups have no doubt tended largely to the improvement of taste in these matters, not only amongst exhibitors, but amongst the more numerous gardening visitors who do not compete publicly, yet have much home work of a similar character requiring their attention. At one exhibition near London, *i.e.*, that held by the Chiswick Horticultural Society, the groups have for several years been an important feature, and recognising this a generous supporter of the Society, Mrs. S. A. Lee, determined last year to give still further encouragement to exhibitors. This took the form of a Jubilee challenge cup, value twenty-six guineas, offered with the condition that it "became the absolute property of the exhibitor who is awarded the first prize three years, not necessarily in succession." The group to be arranged for effect in a space not exceeding 100 square feet. Money prizes, consisting of £4, £3, £2, and £1, were also contributed by the Society, and although there were only three competitors at the 1887 Show, and the same number at that held last Thursday, the style of their arrangement and their general excellence were distinctly in advance of what are ordinarily seen at shows. It will be remembered that last year Mr. W. Brown, St. Mary's Grove Nursery, Richmond, was the winner of the first prize, and his group, an exceptionally beautiful one, was illustrated in this Journal, page 75, July 28th. This season he repeated his former success in winning the premier prize, but surpassed his previous efforts in graceful arrangement. The winning group was critically examined by a number of horticulturists, and only one opinion was expressed even by the other defeated but generous competitors—namely, that it was faultless. Of hundreds of such groups, staged in all parts of the country, I have never seen one so admirably finished, so light and so bright without a preponderance of colour or the introduction of discordant tints. It bore the impress of a keen and accurate study, combined with excellent taste, so that the art employed was most carefully concealed, and the effect natural and pleasing in the extreme. No unsightly pots or bare ugly stems visible, not a suspicion of crowding nor yet of thinness, all the plants well chosen, and an admirably finished margin. It was, in fact, a surprise even to the exhibitor's closest friends, and amply deserved what was freely accorded—the highest praise.

A few details respecting the plants employed may be given, but it is difficult to convey an accurate idea of their combination and the many points which made the group remarkable. The taller plants in the background were light graceful Palms, Cocos Weddelliana, Kentias, &c. ; the chief other foliage plants, Caladium argyrites, a few well-coloured Crotons, clearly variegated Cyperus alternifolius and Eulalias, with a groundwork of Adiantum cuneatum. One characteristic of the Ferns, and it added much to the beauty of the group, was their fresh bright green colour, owing to the number of young well-developed fronds with which they were furnished, and it was surprising what an influence this had on the general effect, the soft green of young Adiantum fronds being a particularly pleasing yet almost neutral tint. The flowering plants were Lilium lancifolium varieties, L. longiflorum, L. auratum, and L. candidum, only a few of each, two or three richly coloured Cattleyas peeping out near velvety Gloxinias and delicate Odontoglossums, a small graceful yellow-flowered Oncidium in the centre near a deep red narrow-leaved Croton having a charming appearance. In the background, partially concealed by the Eulalias and other foliage plants, were some brilliant Kalosanthes, which in a more prominent position would have "killed" all other colours, but placed as they were they afforded a kind of subdued light, imparting life and warmth to the group. Very few Crotons were employed, medium-sized plants well-coloured and furnished with foliage to the pots, one of the red-veined majesticus type in the centre, two of the graceful drooping golden interruptus aureus type at the sides, and two Disraeli varieties towards the front. The margin also was carefully considered, very fresh Adiantums, the silvery and red-veined Fittonias, and Caladium argyrites being the plants associated together in a free natural manner, and all pots concealed.

The two other groups were commendable in no ordinary degree. That from Messrs. Hooper & Co. was but few points behind the first, but two or three slight mistakes were noticeable. First, slightly too many plants were employed ; secondly, a dark Anthurium was placed in the background, which had precisely the opposite effect to what was needed on so dull a day ; and thirdly, the margin was partially of dark moss and partially of Selaginella. A point would be lost on each of these defects, but beyond that it was equal to the other in style, arrangement, and harmony, for Mr. Bruckhaus is one of the most experienced and successful competitors in such classes. Mr. Fromow's had all the merits of lightness and grace, but was slightly wanting in finish, while in another class Mr. Hudson's silver medal group afforded ample evidence of good taste. Altogether there is no question that such groups are not only useful and educational, but they also afford an interesting feature to visitors.—L. Castle.

STRAWBERRIES FOR FORCING.

SINGLE CROWNS.

That plants restricted to one crown are better for forcing than those allowed to form a number of crowns cannot be substantiated. It is a theory that has originated undoubtedly by making no provision for early runners, thus half the season has gone before the plants have been started, leaving insufficient time to thoroughly develope one good crown. When the plants have been allowed a natural course they have developed minor crowns, which have told against the principal one, and being insufficiently matured to flower have only crowded the plants with foliage, hence those with more than one crown have been condemned for forcing purposes. If notions of this nature become firmly established they are difficult to eradicate.

The single crown theory has led to evils, and crown-splitting is one result. It is unnatural for many varieties to be restricted to a single crown. Take Sir Joseph Paxton and Vicomtese Hericart de Thury for example. Long before they have developed a strong crown or produced others, attempt to restrict these to one crown, and the result, if layered, say before the close of July, and with an average season, is that a large per-centage will split their crowns in the last stages. President may be taken as an example of those that naturally develope one strong crown instead of three or more. Crown-splitting with varieties of this type is more liable to take place under any system of culture than those that increase their crowns naturally in the early stages of their growth. Splitting nearly always takes place near the end of the season when the plants have developed their main crown. This seldom occurs when they have other channels in which to direct their energies, but when restricted nothing but a divided crown can be anticipated.

When the plants are layered early, say by the end of June, the crowns will be fully developed while the weather is good and the sun has still power. A divided crown is not then such an objectionable feature as many would lead us to believe. A plant that has split its crown just before early frosts is certainly unfortunate, but when it takes place in time for both crowns to be further developed and thoroughly matured, it is capable of producing more large fruits than a single crown. If layers are taken early and allowed a natural course no one need trouble about crown-splitting.

A friend writing a week or two ago said, "I know your plan of raising plants and retaining a plantation purposely for runners is an excellent one, but many situated as I am have not the room or time to attend to them." I know exactly how my friend is placed, but very little room is wasted by carrying out the plan on the lines I have advised. For example, let us look at the border which is producing runners this season. The Strawberries were planted after a crop of early Potatoes (Myatt's Prolific) without manuring or digging the ground, the rows being 18 inches apart and the plants 1 foot asunder in the rows. Between the rows a late crop of Cos Lettuces was taken. Another crop of Cos Lettuces has been taken from the border this season. The available space between the rows is now filled with 5, 5½, and 6-inch pots, with the runners pegged into them. There is no method known to me that requires less labour than layering direct into the largest pots. Layering into small pots with watering and potting will take double the time. A smart man in a day of ten and a half hours will fill with soil 1000 5 or 6-inch pots, provided the pots are crocked, the soil ready, and placed on the bench. But to return to the plantation. When one is planted every season for yielding early runners it is in the best possible condition for bearing a heavy crop of fine fruit the following one, and this leaves a plantation to be destroyed after the fruit has been gathered, and from the

ground a valuable winter or spring crop can be taken. Very little, if anything, is lost by this close system of cropping.

I intended referring especially to the system described by Mr. R. Inglis in August last. It deserves more attention than has been bestowed upon it. I promised to try it, and have done so, and in spite of the objections that can be urged against it the plan is an excellent one. I strongly advise all who are short-handed and sadly limited for room to give it a trial, for it is perhaps the best of all methods for small growers and those similarly situated. I am not certain whether it will not commend itself to those who grow on a large scale, especially for all the plants required for forcing moderately early in the season. The substance of Mr. Inglis's plan may with advantage be given again. After the Strawberries have fruited and the plantation has been cleared of weeds, litter, and runners, the ground is hoed, and the plants produce a late crop of runners. When these are rooted, which is the case by October, they are taken off and dibbled into the ground 2 inches apart. In spring they are placed in small pots directly signs of growth are visible, and the pots are plunged in ashes, the final potting taking place during June and the early part of July. One grower having tried it, objected to the system because it had the disadvantage of causing the "crowns to split." This objection is not worth consideration if the plants are left alone after their final potting. Mr. Inglis tried, if I remember rightly, to point out that to guard against this evil the crowns were thinned. Unless I have observed wrongly this method of treatment is just the course to follow if the grower wishes the plants to divide their crowns. If they are to be thinned let it be done after the completion of growth, and then only the puny crowns that it is certain will not flower. I also raised objections to the system, but principally from an economical point of view, the plants being too long on hand, and therefore entailing more labour than is occasioned by providing a plantation and layering direct into the fruiting pots. I must still maintain this objection, for the labour required is about the same as when runners are pegged first into 60's and afterwards placed in their fruiting pots. They are liable also to be seriously stunted by following closely the original plan.

In spite of these objections, some of which can be overcome, this system, or one that has sprung out of it, is well worthy of consideration. To give some idea of the estimation I have of the method, I shall prepare 1000 plants of Vicomtesse Hericart de Thury for early work in pots next year. When selecting small runners for the formation of a new plantation the required number will be potted. When rooted they will be planted out 6 inches apart in some position where they can be watered at night prior to lifting the next day if the ground is dry. This allows of their being placed direct into the large pots in June. Why we pot them previous to planting at first is only a natural question. I have varied Mr. Inglis's plan by potting and by retaining plants in small pots, and like the potting and planting out better than dibbling them out or retaining them in pots. By the last method small pots become too crowded with roots for the well-being of the plants. Those dibbled out cannot on our light soil be lifted satisfactorily, and are therefore seriously checked while they are in full growth. Those potted can be lifted readily. A good watering is given after they are potted, they are well syringed twice during the day, and in ten days they are rooting again freely and growing vigorously.—Wm. Bardney.

THE GARDENERS' ORPHAN FUND.

When propositions were made about seventeen months ago, which culminated in the establishment of this charity on July 12th, 1887, the most sanguine of its promoters could scarcely anticipate that so much would be done in so short a time as has actually been accomplished. The decision arrived at by the Executive Committee at the first annual meeting described below must come as a gratifying surprise to the majority of persons who have followed the progress that has been from time to time recorded of the young but vigorous organisation. As is stated in the official "Report," "the fact that expenses have been met and provision made for electing six children the first year, is, if not unprecedented, certainly most gratifying." But the Committee has gone even beyond its own report in having unanimously determined at the last moment not to exclude any candidates whose claims were admitted from the benefits of the Fund. The step taken was a bold and generous one, based on a trust in gardeners and those whom they serve to increase their efforts in obtaining support for an institution that is destined to gladden the hearts of widows, and afford the means of sustenance to the children of gardeners left practically helpless on the world. The Gardeners' Orphan Fund has made a splendid beginning in its work, and it is most gratifying to know that other excellent institutions with which gardeners are identified have gathered strength since this was established. The anniversary dinner and "great gathering of gardeners" equalled, if it did not surpass, all that was expected of it by the promoters. A noble room, splendidly decorated with towering Palms and various plants; seven long tables most tastefully furnished with flowers and fruit; music provided by talented artistes; the finest representative company of horticulturists seen for many a day; excellent and high-toned speeches; viands choice and abundant—all these combined to impel experienced "diners out" to express the opinion that it was "the best and most successful 5s. dinner ever held in London." The manager of the Cannon Street Hotel deserves a word of warm congratulation, while all who contributed plants, flowers, and fruit merited the thanks that were unanimously accorded by the assemblage. The various speakers were much applauded, and bouquets were presented to Miss Mary Belval and her accomplished coadjutors, who contributed so much to the evening's enjoyment. The proceedings of the meeting, with a condensed report of the after-dinner speeches, are appended.

ANNUAL MEETING AND ELECTION.

The general annual meeting of the Committee and subscribers was held in Cannon Street Hotel on Friday, the 13th inst., at 2 p.m., Mr. G. Deal in the chair, but there was only a small attendance, as the majority had sent in their voting papers and did not arrive until a later period for the dinner. The Hon. Secretary, Mr. A. F. Barron, read the advertisement calling the meeting, and then also read the annual report and balance-sheet which follow.

REPORT OF THE EXECUTIVE COMMITTEE, FOR THE YEAR ENDING JUNE 8TH, 1888.

The first duty of the Executive Committee of the Gardeners' Orphan Fund is to record a feeling of gratitude for the support that has been accorded, and which has placed the charity on a basis firmer and sounder than could have been reasonably anticipated when the propositions were made that led to its establishment.

In this, the first annual report, the Committee think it desirable to recount briefly the origin and institution of the Fund.

The year 1887 was of historical importance as the fiftieth anniversary of the reign of the Sovereign of these realms, and a strong desire was manifested that gardeners and others engaged or interested in horticultural pursuits should identify themselves with some object commemorative of that auspicious event.

The columns of the horticultural press were crowded with suggestions as to the most appropriate form in which united expression could be given to this desire, and Mr. C. Penny, gardener to H.R.H. the Prince of Wales at Sandringham, issued a proposition, published on February 10th, that met with a prompt and warm reception; suggestions of a similar nature were made almost simultaneously by Mr. H. J. Clayton, of Grimston Park, Tadcaster, and Mr. J. Udale, of Elford Hall, Tamworth.

Sympathy with the object was spontaneous, and on the 24th of the same month Mr. Penny was able to announce publicly that the first promised annual subscription to a fund for the benefit of the orphan children of gardeners was made by Mr. E. J. Beale (of Messrs. James Carter & Co.), who was immediately followed by Mr. William Bull and Messrs. Sutton & Sons. Mr. H. J. Veitch also promised support, and subsequently gave a munificent donation.

On March 17th a list of ninety subscribers was published, and on the 22nd of the same month a provisional Committee was appointed in London to devise a plan of action that would best meet the end in view.

On April 14th an appeal was made to gardeners for their adherence to the project then formulated, and the returns justified the holding of a general meeting for receiving the report of the Provisional Committee, and considering the rules at the same time presented.

This meeting was held on July 12th, in the gardens of the Royal Horticultural Society at South Kensington, and the Gardeners' Orphan Fund was formally established. Officers were then appointed and Sir Julian Goldsmid, Bart., M.P., elected the first President, his sympathy with the object in view being expressed by a generous contribution to the charity.

Considering the short lapse of time since the movement was originated, the Committee point with gladness to the results achieved. The financial statement shows the amount received, invested, and disbursed. In the establishment of institutions initiatory expenses are necessarily incurred that are essentially of a special nature, and which are not called for in subsequent management. The fact that these expenses have been met, and provision made for electing six children the first year, is, if not unprecedented, certainly most gratifying, and sincere thanks are tendered to all who have contributed to this most satisfactory result.

The Executive Committee desire to recognise the valuable and effective co-operation of the several local secretaries, now numbering ninety, who bring the claims of the charity to the notice of gardeners and their friends in their several districts, and reliance is placed on their further aid and continued efforts. The incentive to this is an ever-increasing number of applicants for the benefit of the Fund, and this fact demonstrates the necessity for its existence.

The Committee also desire to acknowledge their indebtedness to the Council of the Royal Horticultural Society for permitting their gardens

at Chiswick to be the head-quarters of the Fund; to the Duke of Bedford for the facilities afforded for the Covent Garden Fête, and for his handsome donation; to the proprietors and editors of the gardening journals for the great interest they have shown in the charity, which has been strengthened by the aid thus rendered; and to the auditors, Mr. W. Sharp and Mr. C. H. Sharman, the latter of whom kindly acted on this occasion for Mr. John Fraser.

The death is greatly lamented of Mr. John Woodbridge, who was a valued member of the Committee and a true friend of the charity.

Mr. William Poupart, of Twickenham, has been elected a member of the Committee in the place of the late Mr. Woodbridge, and Mr. A. Assbee of Covent Garden in the place of Mr. Wood Ingram, resigned. The members who retire, according to the rules, are Messrs. Barr, Douglas, Holmes, Sharman, Smith, Turner, and Williams, and the four last named are recommended for re-election. Mr. G. W. Cummins, The Grange Gardens, Hackbridge; Mr. C. Howe, Benham Park Gardens, Newbury; and Mr. J. Walker, Whitton, are recommended for election as new members. The retiring Auditor, Mr. John Fraser; the Treasurer, Mr. J. B. Haywood, and the Hon. Secretary, Mr. A. F. Barron, are also nominated for re-election.

To all organisations designed to meet the necessities of gardeners after their term of labour is over, or who are temporarily incapacitated, the Executive Committee of the Gardeners' Orphan Fund wish unbounded success, and for their own charity they bespeak practical sympathy—help for the helpless. Of these, unfortunately, there is no lack, for, to cite the words of our President in his address last year, "every one is liable to sickness, and now and then the head of the family is removed, and the children are left to battle with an eager and greedy world." Let us help them in the unequal contest.

CASH STATEMENT, JUNE 30TH, 1888.

RECEIPTS.

	£ s. d.	£ s. d.
To donations, general, including Covent Garden Fête, *see* below *		1131 19 9
„ Subscriptions, general, including Covent Garden Fête, *see* below *		302 6 0
„ Local Secretaries' donations and subscriptions		382 5 2
„ Dividend upon £500 Consols		4 17 10
		£1821 8 9

* COVENT GARDEN FETE.

Receipts:—Donations and subscriptions	237 11 4	
Payments:—Expenses of Fête	74 8 7	
		£163 2 9

PAYMENTS.

	£ s. d.	£ s. d.
By printing and stationery		108 15 9
„ Postage		59 11 3
„ Collecting boxes		8 10 0
„ Advertising		0 14 0
„ Addressing circulars		10 19 4
„ Hire of room for meetings		5 5 0
„ Local Secretaries' expenses		2 13 7
„ Secretary's Clerk's salary		10 0 0
„ Bank charges		0 13 7
„ Sundry expenses (petty cash)		2 16 5
„ Purchase of £500 Stock, 2¾ Consols	508 2 6	
„ Ditto do. do. do.	495 0 6	
		1003 3 0
„ Balance in hand of Secretary on account of petty cash	3 12 2	
„ Balance at bank	604 14 8	
		608 6 10
		£1821 8 9
„ Balance brought forward		£608 6 10

Having inspected the securities, and examined the books and vouchers supplied to us, we certify that the above cash account is correct.

Signed:—WM. SHARP, CHARTERED ACCOUNTANT
CHAS. HENRY SHARMAN } *Auditors.*

Dated, 6th July, 1888.

Mr. Deal, in moving the adoption of the report, stated that when he was first called to take the chair at their meetings he little anticipated the success would be so great, but it showed what could be done when energetic men combined to attain a definite object. The report needed no special remark, but with regard to the balance-sheet he called attention to the substantial assistance the local secretaries had rendered, which was the more surprising considering their isolated positions. In considering the expenses he said that printing and stationery was a rather heavy item, but they had to establish a system of book-keeping and incur many expenses that would not be necessary for several years, as their books would carry them over a period of five years. The advertising item was an extremely small one owing to the generous assistance they received from the horticultural press, and the clerk's salary of £10 was also very small considering the great amount of work performed. He thought the result of the first year's work was highly gratifying, and the Gardeners' Orphan Fund might be regarded as a most successful institution. Mr. H. J. Veitch seconded the adoption of the report, and said the most satisfactory indication of their progress was the fact that at the end of their first year they were able to elect six children to the benefits of the Fund. The accounts were clear and favourable, and he wished it to be specially observed that one of the auditors was a chartered accountant quite independent of the Committee. The report was then adopted unanimously. The officers were then duly re-elected with the new members of the Committee, as suggested in the report, and after an alteration in Rule 2 by inserting the words "Orphans of gardeners or foremen in public, private, and market gardens" had been agreed to, the meeting was adjourned for the purpose of collecting and classifying the votes.

The following was the list of candidates, with the number of votes obtained, as subsequently announced, but, as was stated by the President during the evening, the Committee had the pleasure of electing the whole of the candidates.

1. ALBERT EDWARD BEST, seven years of age. Father a gardener for ten years; last employer, Cecil H. T. Price, Esq., Kenley, Surrey. Died 1887, leaving four children, aged respectively—three boys, 22, 17, 7; one girl, 13; without any means of support; the eldest son (22) at present in hospital; mother living, quite unable to work; in receipt of parish relief. 24, Hartley Cottages, Purley, Surrey.

2. RALPH JOSEPH GARDINER (131), nine years of age. Father head gardener to A. Akers-Douglas, Esq., M.P. Died, 1884, leaving six children, aged respectively—four boys, 14, 12, 11, 9; one girl, 7 (one since dead); entirely dependent on their grandparents; mother in delicate health. Gaunt's House, Wimborne.

3. EMILY MABEL HYDE (245), five years of age. Father sixteen years as head gardener; last employer, R. Christy, Esq., Watergate, Emsworth, Hants. Died 1888, leaving nine children, aged respectively—four boys, 15, 12, 6, 10 months; five girls, 14, 10, 7, 5, 2; entirely dependent on friends, no income whatever; mother living. Bush House, Watergate, Emsworth, Hants.

4. ALBERT LACEY (166), five years of age. Father employed ten years as second gardener to S. C. Gibbons, Esq., Walstead, Lindfield. Died 1887, leaving four children, aged respectively—one girl, 13; three boys, 9, 5, 2, totally unprovided for, mother living; supports herself and family by charing. Walstead, Lindfield, Sussex.

5. EMILY SMITH (153), three years of age. Father twenty-one years employed as a gardener in different situations; last employer, Mrs. Walker, Blythe Hall, Notts. Died 1885, leaving ten children, aged respectively—one boy, 17 years; nine girls, 19, 15, 14, 12, 10, 6 (twins), 5, 3, totally unprovided for; mother living, earns a little by needlework. Opposite Steam Saw Mills, Albert Road, Retford, Notts.

6. GEORGE SMITH, five years of age. Father head gardener for twelve years; last employer, J. F. Schwann, Esq., Oakfield, Somerset Road, Wimbledon. Died 1887, leaving three children, aged respectively—one girl, 14; two boys, 10, 5, without any means of support; mother living, supports herself and children by needlework, nursing, &c. 10, Belvedere Cottages, Church Road, Wimbledon.

7. VICTOR SPYERS (88), ten years of age. Father Orchid grower for eight years to Sir Trevor Lawrence, Bart., M.P. Died 1883, leaving four children, aged respectively—two boys, 10, 8; two girls, 11, 6, totally unprovided for; mother living, receives 5s. per week from husband's former employer, and about 6s. per week rent of cottage built from the "Spyers' Memorial Fund." Brickyard, Broad Mayne, Dorchester, Dorset.

8. WILLIAM SAMUEL STANNARD, four years of age. Father fifteen years employed as a gardener; last employer, Rear-Admiral R. R. Cator, Hazlehurst, King's Langley. Died 1888, after long illness, leaving three children, aged respectively—two boys, 4 years, 10 months; one girl, 2½ years; without any means of support; mother living. Adrian Road, Abbot's Langley, Herts.

9. ETHEL STAPLES, five years of age. Father a gardener for twenty-eight years; last employer, Henry Oppenheim, Esq., Chipstead Place, Sevenoaks. Died 1887, leaving eight children, aged respectively—five girls, 23, 22, 20, 7, 5; three boys, 17, 15, 12, unprovided for; mother living. Chipstead, Sevenoaks, Kent.

10. ALFRED SWANSBOROUGH (171), seven years of age. Father head gardener for ten years; last employer, P. Ricardo, Esq., Bramley Park, Guildford. Died 1885, leaving four children, three boys, aged respectively—11, 8, 7 (one since dead); supported entirely by relatives; mother died 1881. Bridge Road, Godalming, Surrey.

THE DINNER.

THE first anniversary dinner and gathering of gardeners in connection with the Gardeners' Orphan Fund was held last Friday evening at "Cannon Street Hotel." There was a very large attendance, about 200 being present. Sir Julian Goldsmid, Bart., M.P., President of the Fund, occupied the chair, and among those present were Dr. Masters, Dr. Hogg, Messrs. G. Deal, Shirley Hibberd, H. J. Veitch, H. M. Pollett, J. R. Bourne, W. Bull, J. Willing, N. Sherwood, J. Laing, J. Hudson, R. Dean, H. Cannell, A. F. Barron, J. Wright, B. Wynne, W. Richards, H. J. Clayton, T. Garnett, A. Dickson, W. Paul, H. Williams, J. Weeks, T. W. Sanders, D. T. Fish, J. Cheal, J. Roberts, E. Molyneux, H. Turner, A. Assbee, H. J. Baker, S. Ollard, T. Manning, G. Nicholson, H. Herbst, H. Ross (Perth), C. Ross, D. Cuthbertson (Paisley), J. Hudson, J. Willard, W. Wildsmith, W. Holmes, J. Smith, &c.

The loyal toasts having been given from the chair,

The PRESIDENT proposed "The Gardeners' Orphan Fund." He said it was only twelve months ago the previous day that some of them had the pleasure of assembling in the Royal Horticultural Gardens in order to initiate the Gardeners' Orphan Fund. The idea originated with Mr. Penny, the much-respected gardener of the Prince of Wales at Sandringham, and received a ready support from a large number of friends of horticulture. The result of the action then taken was that at that meeting the Society was organised, and if he might venture to say so Mr. Deal took upon himself the lion's share of the work, and had done it well. (Cheers.) He had shown not only great energy and zeal in the cause, but great discretion in the management of the business, and although he had been well aided by the most energetic Committee and others who had given means and personal assistance, his example had been contagious, and had led to the wonderful success which had already

attended the Fund. (Cheers.) It was only twelve months since the Fund had been established, and already they had had an election of candidates who had had the benefits of the Fund conferred upon them. In order to show them in what a good cause they had enlisted, he desired to direct their attention to two of the families who had been relieved. He mentioned one case of a gardener who had died leaving a widow with nine children. They had no income whatever, and no man would imagine that one poor woman could earn by her labour sufficient to maintain a family of nine children. Consequently they saw what a good work they had done in establishing a fund that could afford the necessary relief. Another case which was equally interesting was that of a gardener who had left ten children, the eldest nineteen and the youngest three years of age. The mother did a little needlework, and the elder children did something, still there was room for the charitable work which had been done by a Society such as that. (Cheers.) He thought they could see by those two examples how much room there was for the aid of such a Society, and to what good results it was likely to lead. They had had that day an election, and six candidates were chosen; but fortunately the success of the Fund had been so great that the Committee had generously decided that they would elect all the candidates to the benefits of the Society. (Cheers.) Consequently instead of having only six, they had now altogether ten annuitants on the list. (Cheers.) There were others still waiting, and even since the election that afternoon one most deserving case had applied for the benefits of that charity. So that they would see that there was yet much for them to do. They would remember that many of their friends in Covent Garden assisted that Fund by a magnificent fête, the like of which he for one had never seen. (Cheers.) He trusted that something of the kind might become one of the established institutions of the Metropolis in aid of the Gardeners' Fund. (Cheers.) He would venture to suggest to the Committee that on a future occasion there should be a universal charge for admission, which should apply to the Committee and everybody else. (Cheers.) He believed that the result would be that a considerable sum would be added to the funds of that laudable institution. He would like to say a word in approbation of Mr. Laing and Messrs. Wills and Segar for the way in which they had decorated the tables and room with magnificent plants and flowers, and of friends who had sent splendid fruit. (Cheers.) Such a display was seldom seen.

Now as to the financial position of this yearling—the Gardeners' Orphan Fund. It was a yearling on the previous day, and he found that already the donations, including the Covent Garden fête, amounted to £1131, and the general subscriptions, including Covent Garden fête, amounted to £302. What was more important was that the local secretaries' donations and subscriptions amounted to £382. The life of an institution like that was in the local interest and local support, and consequently he was delighted to see that a large sum had been received from the different parts of the country. He trusted that that sum would go on increasing. In addition to that there was the modest sum of dividend upon £500 consols amounting to £4 17s. 10d., so that the total receipts were £1821 8s. 9d. (Cheers.) The expenditure had amounted to £1003. Two sums of £508 and £495 had been invested. The expenses of management had not amounted to a sum of £200, so that for that sum the Fund had been established and managed, and made known to all the horticulturists of England. (Cheers.) It was the most economical start he had ever heard of, and it promised well for the future. In addition to that Mr. Deal, like a wise man, liked to have at the first of their annual dinners a good balance at the bankers, and he found that he had the very handsome sum of £604 14s. 8d. there, in addition to the £1003 invested; so that the Society really started with money invested, or ready for investment amounting to £1600. He would like to know where there was another Society of such a kind as that which had had such a promising start. (Hear, hear.) The Fund had appealed to a large number of the public because they saw that the cause in which they were enlisted was a good cause, which commended itself to the heart of every man. It was the cause of the widow and the orphan. (Cheers.) The widow and the orphan were the source of deep interest to every man at that table. The appeal was an appeal to the best instincts of the human heart.. He rejoiced that the effort which had been made had been so successful, and he ventured to prognosticate much greater success in the future, and that this would be one of the most popular institution of that excellent and highly intelligent class the gardeners. (Cheers.) He had been talking to some neighbours about the difference which existed between the English and the foreign workmen as to technical education. Fortunately for them and the general public the gardeners had never been deficient in that first element of education which was requisite for every trade and profession, because there was not one gardener who had not had to learn something scientific and something technical in order to obtain the position which he occupied. (Hear, hear.) He rejoiced to think that England was not behind other countries in the intelligence and interest which was devoted to horticultural pursuits. It was therefore with the greatest pleasure that he accepted last year the office of President, and it was with equal pleasure that he presided over that dinner. He rejoiced to see so many assembled to give an earnest and hearty support to the Gardeners' Orphan Fund. (Cheers.)

Mr. G. Deal responded. After returning thanks for the manner in which the toast had been proposed, he mentioned that Mr. Willing had kindly given him 10 guineas towards the Fund. (Cheers). Ever since they put him into the position which he occupied he had received the most cordial support from the gentlemen who had assisted him at the various meetings. When they looked at the splendid result of their efforts they might say that as they had sown so they had reaped. (Cheers.) He thought that they had laid the foundation upon which he trusted they would erect a fabric that should extend its shelter throughout the length and breadth of the land. (Cheers.) Nothing could be more gratifying than to find that they had touched the hearts of gardeners throughout the kingdom. That was shown by the manner in which they had responded to the appeal that had been made to them. Having once put their hands to the plough he hoped that they would never leave it. (Cheers.) Having thanked them for drinking the toast of the Gardeners' Orphan Fund he had now to propose another toast, namely—that of "Kindred Institutions." (Cheers.) It seemed to him that they had now a complete chain of institutions for the gardening fraternity. They had their Gardeners' Royal Benevolent Institution for decayed, their Benefit and Provident Society for sick, and now they had added just the last link—namely, the Gardeners' Orphan Fund. He was quite sure that he expressed the most hearty and cordial sentiment of all the gentlemen with whom he had the honour to work, when he said that while they gloried in and were proud of the success of their own institution, the Gardeners' Orphan Fund, they heartily wished equal success to kindred institutions. (Cheers.) Therefore he had much pleasure in proposing that toast. (Cheers.)

Mr. Sherwood, in responding to the toast, said he could congratulate them most heartily on the success attending their first dinner. He had been told that it was some forty-eight years ago that the first dinner of the Gardeners' Royal Benevolent Institution took place, when only some thirteen or fourteen were present. He felt that the greatest thanks were due to Mr. Penny and Mr. Deal for having originated that Fund. He hoped that the institution would flourish as the Gardeners' Benevolent had done.

Mr. Hudson, on behalf of the Gardeners' Sick Fund, also replied. He said that he was happy to say that the fund which he represented was doing a considerable amount of good work. Like a good many other societies, however, they had had a struggle, but he was glad to say that this year they were increasing in numbers at the rate of about 33 per cent., and now had some 300 members.

Dr. Masters, who next proposed "Success to Horticulture," said that everyone in the room he presumed lived by and for horticulture, and therefore when they drank success to horticulture they really in fact drank to their noble selves. (Laughter.) If he might be allowed to say so, his experience was that horticulturists as a body seemed rather deficient in co-operative power. They had allowed the public to look upon horticulture as something exceedingly pleasant and pretty, very nice for recreation; but they had not educated the public at present up to the view that horticulture was a national industry. (Cheers.) He should like to ask them what national industry they could mention which would surpass horticulture. All were absolutely dependent upon horticulture, and he did not know any single industry in this country of more importance. If he were at an assembly of farmers he should be told that agriculture was the most important. But let them read their Bible, and they would find that gardeners existed before the plough. (Laughter and cheers.) But coming to modern times, he asked them whether they could not get three and four times as much out of the land as the farmers did. (Hear, hear.) They might depend upon it that farmers must to a great extent be dependent upon the methods which the gardener followed with so much success. He was glad to see symptoms of their co-operation—one was the present gathering. Never in his own experience had he known gardeners jump at anything as they had at that institution. (Hear, hear.) They had now before them a splendid instance of co-operation. Gardeners had in this instance pulled together more constantly than ever they had done; but if they had always done it, horticulture would have taken the position which he claimed for it in the industries of the country. They now heard that it was proposed to appoint a Minister of Agriculture, Horticulture, and Forestry. Now, he was not one of those who thought that gardening wanted anything from the State. He did not believe, in this country at any rate, that State-aided institutions were any good, but he did believe that gardeners could aid the State, and therefore he rejoiced that there was some prospect of a Minister of Agriculture and Horticulture, because then the gardeners could exercise their influence upon the powers that be for the good of the State in general. (Cheers.)

Mr. H. J. Veitch proceeded to reply to the toast after it had been warmly honoured. He said he had been at some loss to understand why he had been selected to reply to that toast. Perhaps it was because he was a gardener, as a gardener should be—a married man without encumbrance. (Laughter). There were, it seemed to him, three classes of the trade associated with the toast, the first being the nursery and seed trade, who in their corporate capacity employed a great number of persons, and with them he should not forget the horticultural building trade. The next class of persons who were concerned particularly were the gardeners, of whom he believed there were at least 20,000 names enumerated. Let them also remember the number of people employed in fruit gardening on land which had been converted from farming purposes. That brought in another class of people—those who were occupied in preserving the products of those gardens. Thus the number of people dependent upon horticulture in Great Britain was immense, and he felt proud to be called upon to speak for such a representative body. There were then numbers of employers who derived pleasure from their gardens in this country. If gardens were done away with his hearers could imagine the loss of pleasure tha

would ensue. They had only to look at the financial position of themselves in the country, and he thought then that in comparison with some other trades they would admit that they did what they could to help the unfortunate. (Cheers.)

Mr. J. R. Bourne concurred in the remarks of Mr. Veitch upon the importance of horticulture.

Mr. Wildsmith also briefly replied in a warm-hearted speech, with a genuine gardening ring prevailing that met with great acceptance.

The next toast was that of "The President, the Chairman," which Dr. Hogg proposed. In so doing he said that at the formation of the Fund everything seemed prosperous, but they could not tell where to find a President. They knew the success of movements such as that depended very much upon the way in which they were floated. They wanted to have a man of position and good name, and the first thing they had to do was to look out for such a man. They were all very much troubled upon that point, but one day his good friend, Mr. Deal, came towards him, and his (Mr. Deal's) face was beaming more than it usually did. (Cheers and laughter) He (the speaker) said to himself, "There's good news for us." So he asked Mr. Deal, "Well, how are things going?" Mr. Deal said, "I have, I think, got a President." "Indeed, who is he?" he asked. "Well, it's rather a secret," replied Mr. Deal, "but you need not say anything about it; it is Sir Julian Goldsmid." (Cheers.) "Well," replied he (the speaker), "if you have got Sir Julian Goldsmid success is assured." (Cheers.) Well, Sir Julian had become the President, and he did not think they could have done better, for he was known for his philanthropy and largeness of heart throughout the world. That was not his only claim to consideration from them, for he not only had a consideration for gardeners' orphans, but he also had a consideration for gardening and gardeners. To have had anyone presiding over that Society who was not a gardener and could not talk about gardening would be an anomaly. (Hear, hear). But Sir Julian was not such a man, and he trusted that they would see him spared for many years to preside over the institution. (Loud cheers).

The President, in responding, said he had always taken great interest to the beauties which gardeners cultivated. When visiting his friends, if asked whether he would like to go shooting or fishing he generally replied, "If you don't mind I should like to waste your gardener's time for the rest of the morning"—(laughter and cheers)—and he had never come away from wasting a gardener's time without having learned something of the greatest possible interest. The gardener's art was one of which they might well be proud. (Cheers.)

Mr. R. Dean then gave "The Vice-Presidents and Trustees," to which Mr. Bull and Mr. Pollett briefly replied.

Mr. Shirley Hibberd, in proposing "The Auditors, Officers, and Committee," said he was astonished at the example the gardeners had shown of unselfish enthusiasm in founding that institution, as by it they could not expect to benefit themselves personally. He did not know of any society which had made such progress in the course of twelve months, and when he heard the floating of it had cost £200, he said it was nothing, because they had accomplished the unity of gardeners. He had seen the officers of the Society grinding away at work on its behalf. The success of the Society was in the first place due to the fact that it had originated with the gardeners themselves, and in the next place they had had the good sense to accept the assistance of good business men who knew how to "turn the mangle." (Cheers.) Much yet remained to be done for the Fund, for they had that day incurred a great responsibility in placing ten applicants on its funds.

Mr. H. Herbst and Mr. A. F. Barron briefly responded to the toast, after which

Mr. G. Deal proposed, "The Local Secretaries." He recognised with the utmost cordiality the great assistance that the Fund had received from the local secretaries. When the idea of appointing local secretaries throughout the land was proposed it was little contemplated that, situated as gardeners generally were, they would be able to take up the cause as they had done. But they had worked in the most zealous manner. (Cheers.) He must express the great astonishment and pleasure felt by the Committee when they found the returns from the local secretaries had amounted to the very handsome sum of £382. He could express the most profound gratitude on the part of the Committee for that. (Cheers.)

Mr. D. T. Fish responded, addressing his auditors as "brothers of pen, spade, and knife," he said that someone had spoken of the enterprise and energy displayed by gardeners, but he thought that if there was anything they had cause to be proud of it was the starting and so far successful working of the Gardeners' Orphan Fund. If ever there was a practical sermon preached it was in their Council Room that morning, where they saw exemplified the scriptural phrase that "pure religion and undefiled is to visit the sick, the fatherless, and the widow." (Cheers.) He was proud of the gathering and the leader which they had that night, and he felt that this was only a beginning of the great work which was before them. (Hear, hear.) As one of the local secretaries he had felt ashamed at being only able to send a contribution of £12 10s., but he anticipated sending £50, and he would not rest satisfied until he could send £50 from Suffolk. (Cheers.) He hoped that they would work together as one man not only to make the Institution a brilliant success, but to make it so successful that none of their orphans might ever want aid. (Cheers.)

Mr. Clayton also replied, expressing the pleasure he had in coming from Yorkshire to be present at such a splendid meeting on behalf of so good a cause.

The Chairman briefly proposed "The Visitors," remarking that they not only had English friends, but also foreign. (Cheers.) They had M. Margottin of Paris there, who, as they knew, was one of the most celebrated of the growers of Roses in France. He thought that that fact showed that the interests of that Society were not confined to this country. (Cheers.)

Monsieur Jules Margottin responded in French. He expressed the satisfaction which he felt at being present on that occasion, and his appreciation of the benefits which the Orphan Fund would bring about. He hoped that next year they would double the number of their candidates, and he concluded by drinking success to the Fund. (Cheers.)

Mr. Garnett also replied, saying, that in Yorkshire there had been a very warm feeling in favour of the Fund, which he trusted would have a prosperous career.

Mr. G. Deal, who next proposed the toast of "The Press," attributed a great deal of the success the institution had met with since its formation to the assistance it had received from the Press, which had communicated every month to the public the progress of the Fund.

Mr. Wright in responding said that the foundation had done something more than bring about the unity of gardeners, as it had united the Press. Although divided in opinion sometimes upon the various matters brought before the public, the Press was yet happily united in furthering the interests of such societies as that. (Cheers.)

Mr. Wynne also briefly replied to the toast, confirming the previous remarks, and hoping the Press would always have a good account to give of the progress of the Fund.

This concluded the list of toasts, and on the motion of Dr. Hogg a cordial vote of thanks was passed to Messrs. Low & Co., Messrs. Laing and Co., Messrs. Wills & Segar, Messrs. Webber, Messrs. Lane & Son, Messrs. Paul & Son, Messrs. Cannell & Sons, Messrs. Cheal & Co., Mr. T. Francis Rivers, Mr. C. Turner, Mr. J. Walker, Mr. G. Munro, and Mr. Webber, who had supplied plants, flowers, and fruit with which the tables and the room had been plentifully supplied and tastefully decorated.

During the evening selections of vocal music were given under the direction of Miss Mary Belval, Miss E. Champion presiding at the pianoforte.

CAMELLIAS.

In an old span-roofed house having high front sashes in an Exeter garden is a fine example of Camellia culture. The house runs north and south, and is 32 feet long. The Camellias are planted in a bed in the centre of the house, and which, with the exception of the flag passage at the sides and ends, they completely fill to the height of 14 feet with healthy wood and large dark green leaves as close together as a well kept healthy Yew hedge. The branches having in the course of the last few years reached the glass, Mr. Selliek very properly headed them down to the level of the sides and ends last spring with the best possible results. The border at the same time had a few inches of the surface soil removed, and good turfy loam supplied as a top-dressing, giving the whole a good soaking of tepid water, with subsequent waterings of liquid manure at the roots. Copious syringings with clear water were given morning and afternoon at closing time after the plants had flowered to insure healthy growth being made, preparatory to yielding a rich harvest of flowers next winter and spring. When the plants have completed their growth abundance of fresh air is admitted to ripen the wood properly.—H. W. W.



STRAY NOTES.

A lovely white Cattleya was in bloom at Messrs. J. Veitch and Sons' Nursery, Chelsea, the other day. It was a strong plant, with four leading growths, and bore nine flowers. It differed only from C. Wagneri in having a single narrow purple line down the centre of the lip. The houses in this establishment were very gay, the Odontoglossums and Dendrobiums alone repaying for a visit; but the Lælia purpurata, with hundreds of blooms in various shades of colour in the large Cattleya house, was to my mind one of the finest sights imaginable. Odontoglossum madrense is very distinct, and I have seen it well grown by Dr. Duke at Lewisham. The plants were in pots suspended near to the glass in the cool house, where the pseudo-bulbs increased in size each year. The blooms of this useful species remain in perfection for a long time.

Barkerias were also remarkably well grown in the same garden. They occupied the roof of a small lean-to house. Some were in baskets, others on blocks of wood, either of which seemed to suit them. Very little material of any kind was used about the roots, but they were exposed to plenty of air and light, and during the season of growth received abundance of water, but when at rest water was almost entirely withheld. Since my visit Dr. Duke's

interesting collection of Orchids has been sold, and many valuable varieties have passed into other hands.—G. W.

CYPRIPEDIUM MEASURESIANUM.

Hybrid Cypripediums are now becoming very numerous, but there seems to be no limit to their variability, and new forms are constantly being raised and sent out, all with some claims upon the consideration of Orchid growers. Mr. R. H. Measures of Streatham has given special attention to the Cypripediums, with the result that his collection is now a remarkably rich one, including most of the named species, hybrids or varieties, together with several seedlings that have not yet flowered. One of the recent hybrids as yet but little known is represented in the woodcut (fig. 5), kindly lent by Mr. B S. Williams, who is now distributing the plant. This authority thus speaks of C. Measuresianum :—"It is the result of a cross between C. villosum and C. venustum, and has leaves 5 to 8 inches long by 1 to 1½ broad, dark green on the upper surface, and marked with purple on the under side ; flower scapes purple, hairy as in C. venustum ; dorsal sepal ovate-lanceolate, yellow, margined with white, and veined with yellowish green ; petals similar in shape to C. villosum, and having the same varnished appearance, light brown purple changing to bright orange, suffused on the upper half with purple ; lip large, orange tinted, and veined with purple brown."

CARNATION NOTES.

I imagine one of the least studied points in the cultivation of Carnations grown out of doors is that of propagation. As a rule the young shoots are layered when a spare space of time can conveniently be had in which to overtake this work, and the result very often is small not very well-rooted plants, either to stand the winter when layered or planted out too late to be established before winter. The proper time to layer is directly the shoots can be had strong enough, when they root very rapidly, and are ready for planting into beds or nursery lines in early autumn, with good roots and strong healthy shoots. The result in the ensuing summer is beds of plants each with many flowering stems, instead of the puny plants incapable of throwing more than one weakly flower stem, and which is more often to be met with in gardens than the kind I am recommending. Early propagation is therefore the point of all others which has the strongest bearing for good in Carnation culture.

Where there are plenty of plants and fine flowers are desired it is a good plan to freely thin the buds, so those left become large. The difference in size is at least one-third, and the petals of the thinned flowers are much broader, giving the flowers a fuller appearance, and adding greatly to their attractiveness. Just now we have Mrs. Sinkins Pink in quantity, some with unthinned flower stems, and others with only one bloom left to a stem, and the result is that no one would think of taking the former, so much finer are the latter. Souvenir de la Malmaison is another case in point. There is no difficulty in obtaining flowers throughout the summer months fully 6 inches across if the stems are freely thinned of buds. Last winter we cut many 4 and 5 inches across ; indeed, the way to have this lovely flower fine is to layer a strong shoot in autumn—up to October will do ; keep it growing, shifting into a 5 or 6-inch pot when needed, and keep the flower stem thinned to one bud, and that bud will unfold a beautiful full bloom of the size noted. Those who have been contented with ordinary-sized flowers of this queenly variety would be surprised to find how much finer it is grown as just recommended.

As has been often pointed out, the easiest method of raising a stock of healthy free-flowering Carnations is by raising seedlings. There can be no doubt that for ordinary garden decoration purposes this is the easiest method, and the plants are very pleasing. But these are not so good for cut flower purposes as are those from well-grown plants of good sorts. Last season Carnations, Pinks, &c., seeded freely, and there was no difficulty in anyone raising a large stock of plants cheaply. If the seeds are sown in January and kept growing many flower the first season, and the next they are good bushes, with many flower stems. One is sure to procure some pretty single sorts from seeds, which though not worth propagating further are useful for furnishing vases.—B.



Fig. 5.—CYPRIPEDIUM MEASURESIANUM.

Tom Thumb Savoy.—There are many varieties of little Savoys offered for sale, but we fear they are all closely related to the old Tom, and it is a good one. Where size is wanted it need not be grown, but where fine little heads of excellent quality are required it will always find favour. It gains maturity in three months, and need not be planted until well into July. The plants are so dwarf and compact that they may be planted 15 inches each way, and it will be found that the whole space will ultimately be covered with choice compact heads.—M.

Notes & Gleanings

EVENTS OF THE WEEK.—The principal Shows of the present week will be the following :—Helensburgh (Roses) and Highgate on the 19th, the National Rose Society's Provincial Show at Darlington on Friday, the 20th inst., with Tibshelf on the 24th and Louth on the 25th inst., both Rose shows. The next meeting of the Royal Horticultural Society, in the Drill Hall, Westminster, will be held in conjunction with the show of the National Carnation and Picotee Society on Tuesday, the 24th inst. The exhibits will also comprize Ferns, Selaginellas, Ivy and Zonal Pelargoniums, &c. Messrs. W. & J. Birkenhead, Sale, Manchester, have promised an extensive collection of Ferns for this meeting.

—— THE Exhibition of the NATIONAL CARNATION AND PICOTEE SOCIETY will be held in the Drill Hall of the London Scottish Volunteers, James's Street, Westminster (adjoining St. James's Park Station, District Railway), on July 24th. A luncheon will be provided at the "Hotel Windsor," Victoria Street, at 1.30 P.M., for members and their friends. Tickets 2s. 6d. each (exclusive of wine), to be obtained from the Secretary, or any member of the Committee. W. T. Thiselton Dyer, Esq., F.R.S., Director of the Royal Gardens, Kew, and Vice-President of the Royal Horticultural Society, has kindly consented to preside. Shirley Hibberd, Esq., will occupy the vice-chair. Subscriptions to the Society were due in January, and the Hon. Treasurer is S. Hibberd, Esq., 1, Priory Road, Kew, near London. Prizes will be paid as usual at 5 P.M. on the day of Exhibition.

—— THE WEATHER.—Mr. C. Orchard writes from the Isle of Wight :—"Roses on the houses and dwarfs are flowering most profusely, the dark varieties keeping their colours well in this dull weather. The vegetables in the kitchen garden have made wonderful growth, the haulm of the Potatoes being of tree-like proportions. The hay crop is very heavy, and would compensate for the very light crop of last season if we were to have what is very much required, a period of bright sunshine, that would perfect the whole, and make a fruitful season. I have been very fortunate so far with my hay crop. I have made hay while the sun shone, and preserved it when it rained, but there is much about here spoiled. It is many years since I saw everything looking so green and luxuriant as now. The chalky hills, or downs as they are here called, which at this season of the year are generally of a rusty brown, are now a verdant green to the very tops. The Bee Orchis that are usually only a few inches high on these exposed places, are now to be found with flower spikes a foot long. Wild flowers on banks and hedgerows have attained unusual proportions."

—— "THE weather," writes a Sheffield correspondent, "still continues most unseasonable, a cold wind blowing from the north-east, with scarcely any sunshine, and cold rains almost daily. On Monday rain was falling fast, and had continued so to do with only two hours intermission since eleven P.M. on Saturday, or nearly forty-eight hours. The ground is saturated and very cold. Roses and Carnations will not be in flower with us before August, nor will Strawberries and Raspberries ripen before that time. Peas are making plenty of haulm, but are podding very slowly indeed. Potatoes also are making abundant top growth but scarcely any tubers. Although Sheffield as notably a very late district as regards vegetation, I have never previously known it so late as this season."

—— THE PORTSMOUTH SHOW.—The Hon. Secretary, Mr. F. Power, writes :—"As it may interest your readers to know the result of popular prices of admission, I give you the exact number of visitors on each day at our Show last week. First day, 661 at 1s. ; 1571 at 6d. ; second day, 6086 at 3d. ; third day, 14,826 at 1d.—total, 23,144. Had the weather been fine no doubt the numbers would have been greater, but a gale of wind and snow falling on the second day was anything but favourable for flower shows."

—— A CORRESPONDENT states that "At the recent Rose Show at Ryde, I.W., a BEAUTIFUL BANK OF ORCHIDS AND FERNS were arranged in the Concert Hall and exhibited, not for competition, by Mr. J. Earle, gardener to Henry Grosse Smith, Esq., The Priory, St. Helens, I.W. The Lælias, Dendrobiums, Cypripediums, Odontoglossums, Oncidiums, Thunias, Masdevallias, Epidendrums, &c., in their several varieties formed an attractive feature in the Exhibition."

—— THE GUERANDE CARROT.—"B." sends this and the following note —"I have been highly pleased with this intermediate sort, which comes into use as quickly as the Early Horn, and very soon outgrows that sort. It entirely supersedes the Early Nantes, and grown alongside Sutton's Early Gem it is slightly ahead of that fine variety. Grown in the open garden and on a south border the results have been alike in these respects."

—— "ANOTHER vegetable worth noting is EARLY PURITAN POTATO, which comes nearer to the standard of good quality than most sorts. We tried it lately with some other new varieties, and it gave much satisfaction, and is marked as a main cropper for another season. Veitch's new early Pea is also a decided step forward as regards earliness, and from Webbs' Early Gem Tomato we gathered a large crop of good fruits in May and June. This is an extremely free variety, and new to me."

—— TOMATOES AT CHISWICK.—The old Rose house in the Royal Horticultural Society's Garden is this season given up to the cultivation of Tomatoes. The house is a light airy structure, about 100 feet in length by 30 feet in width, and contains some 450 plants, planted out in four borders, two on each side of the central walk. The plants are grown with single stems, and trained to stakes about 6 feet in height. The seed was sown early in March, the planting out taking place about the middle of April. Ordinary garden soil is that used. A capital set of fruit has been obtained, and the plants are in vigorous health. Amongst all the sorts bearing the name of Perfection there is a great family resemblance, and of this most useful type producing smooth, solid, scarlet-coloured fruits, there are some 250 plants in the collection. Ham Green Favourite, certificated last year, is a variety worthy of note, being much esteemed at Chiswick. Horsford's Prelude is an American introduction, and will be appreciated by those who like a somewhat small Tomato. It produces its beautiful deep scarlet fruits in clusters, sometimes numbering as many as eighteen fruits, and bearing to within 6 inches of the ground. The plants are characterised by a stocky and compact habit of growth. Early Scarlet Tennis Ball is a round Plum-shaped fruit which is produced in clusters—a very free setter ; a good sort to cultivate where quantity is a desideratum. Laxton's Open Air, a good early variety and a free setter, and that good all-round variety, Hathaway's Excelsior, find a place in the collection. Golden Queen is a very fine yellow-skinned variety, certificated by the Royal Horticultural Society's Fruit Committee two years ago. In a lean-to house adjoining is a collection of about fifty varieties, grown in 12-inch and 16-inch pots, and containing some of the newer sorts, which promise well.

—— A MEETING of the Executive Committee of the YORKSHIRE ASSOCIATION OF HORTICULTURAL SOCIETIES was held on Monday evening last at the Grand Restaurant, Boar Lane, Leeds, Mr. Jos. Smith, President, in the chair, and at which delegates were present from the various societies held at Leeds, Sheffield, Barnsley, and Rotherham. After disposing of a very enjoyable tea, hospitably provided for the delegates by the Leeds Paxton Society, business was proceeded with, and the following resolutions adopted :—First, That the minutes of last meeting be confirmed. Second, That the annual meeting of the Association be held at the Grand Restaurant, Boar Lane, Leeds, on Wednesday, August 1st. Programme for the day's business to be as follows :—10.30 A.M., Meeting of delegates for the transaction of business ; 11.45 A.M., Luncheon for delegates and visitors ; 1.10 P.M., Excursion to Oakworth House Gardens, the residence of Isaac Holden, Esq., M.P. ; 6.10 P.M., Return from ditto ; 6.15 P.M., Tea at Grand Restaurant ; 7 P.M., Lecture by Professor Jefferson "On the Chemical Action of Plants, with Microscopic Illustrations and Experiments." The question arising as to where the business of the Association be conducted and the annual meeting be held in 1889, the delegates from the Sheffield Floral and Horticultural Society signified that they were empowered to invite the same to Sheffield on behalf of their Society. This invitation was received with satisfaction by the Committee, and referred for final decision to the annual meeting. A resolution was also unanimously adopted that before the annual meeting takes place each Society in the Association be requested to hold a special general meeting

of its members for the purpose of full discussion of the work done by the Association, with its present condition and future prospects. Some minor business, with a vote of thanks to the Leeds Paxton Society and to Mr. Smith as President, concluded the meeting.

—— CABBAGE COMPETITION.—Encouraged by the great success attending the Cabbage competition which they inaugurated last year, Messrs. Stuart & Mein, seedsmen, Kelso, determined to hold a similar competition this season, and accordingly Friday last was the date fixed for the Exhibition. Last year, with a view to demonstrating the superiority of Mein's No. 1 Cabbage as an early variety, the firm offered a premium of £5 for the best pair of hearts grown from seed directly supplied by them, the date of Exhibition being in May. On that occasion the prize was won by Mr. D. Inglis, Howick Hall, Northumberland, with two fine Cabbages weighing 8¼ lbs. This year a premium of £5 was again held out, to show that the Cabbage is also the best late variety, standing longest without bursting; and hence the reason for the Show being held much later than last year. No fewer than ninety-one pairs of hearts were sent in from all parts of Great Britain and Ireland. There was a large consignment from Cornwall, the counties of Kent and Devon being also represented, while specimens were sent from as far south as the Isle of Wight. Lincolnshire and Nottinghamshire in the Midlands also made a good appearance, while Scotch exhibits were received from as far north as Forres. Three lots were also forwarded from Parson's Town, Longford, and Ballymena in the north of Ireland. As on the former occasion, the Show took place in Kelso, and the large collection of Cabbages formed a very imposing display, the bulk well matured and generally in good condition. The Judges were Mr. Waite, nurseryman, Berwick-on-Tweed, and Mr. Elphick, of Messrs. Hurst and Son, seed merchants, London, who discharged their duties in a very satisfactory manner. Eventually three pairs were set apart, consigned by Mr. W. H. Divers, Ketton Hall, Stamford, Lincolnshire; Mr. James Lockie, Heatherslaw, Cornhill-on-Tweed; and Mr. Feddon, gardener, Scotby, Carlisle. After considering their respective merits the Judges awarded the premium to Mr. Divers for a pair of hearts of grand form and quality. Originally they weighed 8¼ lbs. and 6¾ lbs. each, but when divested of their outer leaves, in which manner they were judged, they together scaled 9 lbs. The hearts shown by Mr. Lockie and Mr. Feddon were also of a very meritorious description, but neither in form, compactness, nor quality were they equal to the first pair. Mr. James Hall, Kelso, exhibited a very good pair, and had they been more equally matched they would have had a fair chance of gaining the premium. Among the heavier of the Cabbages shown were two sent by Mr. E. Rilestone, Truro, Cornwall, which weighed 28 lbs., and other two pairs scaled 22 lbs. and 20 lbs. respectively.

PORTSMOUTH SHOW.

THE annual flower Show in aid of local charities was opened on the 10th inst. in the Victoria Park. The exhibits were more numerous than last year, and in order to provide the necessary accommodation the Committee have been compelled to make additional space. At two o'clock the Mayor, A. Addison, Esq., who was accompanied by his daughter, arrived, and the Show was at once opened. The Mayor trusted that the Show would be even more successful than those of previous years, and he regretted that every man had not the means to cultivate flowers and plants. Such exhibitions created emulation among gardeners, and in other ways, and did an immense amount of good, and he attributed the increase in the growth of flowers in Portsmouth of late years to the shows which had been held from time to time. The Judges had no easy task in awarding the prizes, the competition being very keen, especially with the cut blooms of Roses from Mr. W. Rumsey, Waltham Cross; Mr. Flight, Twyford, Winchester; Messrs. W. and G. Drover, Farcham. The latter also showed a collection of herbaceous flowers, which was highly commended, and a similar compliment was paid to Messrs. Cutbush & Son, Highgate, who exhibited a fine collection of foliage plants, and Mr. King of Lymington for double Begonias. Mr. F. Power, the popular Hon. Secretary, must be congratulated on the success of the Show, ably assisted by Mr. Hatch, the head gardener of the Park, and Committee. The total receipts for the three days amount to £275 4s. 5d. On Thursday, the charge for admission being 1d., no fewer than 14,706 visitors passed the turnstiles. The number of visitors exceeded that of last year.

The following is the prize list:—Eight stove and greenhouse plants.—First, Mr. J. Cypher, Cheltenham; second, Sir F. Fitzwigram, M.P. (gardener, Mr. J. Penford). Four stove or greenhouse plants.—First, Col. Pepper, Millford Hall, Salisbury; second, E. Bishop, Esq., Southampton (gardener, Mr. E. Hawkins). Three specimen Palms.—First, Mr. J. Cypher; second, Sir F. Fitzwigram, M.P. Miscellaneous collections of plants.—First, Sir F. Fitzwigram; second, E. K. Parsons, Esq. The amateurs of Portsmouth, dockyardmen, exhibited good collections of plants. Ball bouquets and bridal bouquets, Mr. J. Cypher was well to the front.

Roses.--Forty-eight cut blooms, single trusses.--First, Mr. W. Rumsey; second, Mr. Flight; third, Messrs. W. & G. Drover. Twenty-four, three trusses to a bunch.—First, Mr. Rumsey; second, Mr. Flight; third; Messrs. W. & G. Drover. Twelve Teas, distinct.—First, Mr. Flight; second, Messrs. W. & G. Drover; third, Mr. Rumsey. Twelve Hybrid Perpetuals, dark, four distinct varieties.—First, Mr. Rumsey; second, Messrs. W. & G. Drover; third, Messrs. Ewing & Co., Havant. Twelve Hybrid Perpetuals, light, distinct.—First, Mr. Flight; second, Messrs. W. & G. Drover; third, Messrs. Ewing & Co. Twelve Teas or Noisettes, distinct.—First, Mr. Flight; second, Mr. Rumsey; third, Messrs. Ewing and Co.

Fruit and vegetables were well shown by Mr. Penford, and some very fine Tomatoes by Mr. Kimber, gardener, Borough Lunatic Asylum.



NIPHETOS.

A SHORT time since at Gomfield House, Exeter, we noticed a healthy plant of this beautiful Rose trained to a wire trellis fixed beneath the roof of a lean-to house having a south aspect. This vigorously growing tree Mr. Sellick, the gardener, informed us had yielded substantial blooms of pearly whiteness during the spring months, and it had every appearance of producing a good supply of such blooms during the summer and autumn months, as there is a good supply of hot-water pipes in the house with which to produce the necessary temperature during inclement weather. When the plant has ceased flowering and shed its leaves all weakly growths are cut back to one joint from their bases, and any unduly long and strong shoots are shortened back a little to promote a balance of growth.—H. W. W.

A PLAGUE OF EARWIGS.

EARWIGS were had enough last year, but this season we have them already in as large numbers as in last September. Each of my Chrysanthemum pots has a hollow Teazle stalk laid on it, and when these are blown out every morning it is not uncommon to find as many as twenty earwigs in one stalk. I have found five or six in one Maréchal Niel Rose—not an old decayed one, which would be more likely to yield thirty, but in my best young bud in the show tent. They are in our house, in our clothes, in our boots, in our beds. In spite of the cold weather and of the slaughter from the Teazle stalks every morning the numbers are decidedly increasing. It is quite a business to collect and relay all the stalks in the Rose beds and round the Chrysanthemums, but we must increase them; and, with all our pains, I fear the greater part of our flowers and fruit will be spoiled.

However, "it is an ill wind that blows nobody any good;" the trout in the pool in my garden have a real good time when the earwigs are blown to them, and I find a large proportion of the visitors to my rosery are more interested in seeing the rise of the golden two-pounders than in looking at the Roses. I suppose there is nothing more to be done. I find the earwigs are much more quickly collected in the hollow stalks than in moss or flower pots, or anything else.—W. R. RAILLEM.

PROPAGATING ROSES.

CUTTINGS of ripened wood inserted in the open ground last autumn did not strike root nearly so well as usual, this being principally due to the action of the frost on the ground. The cuttings were repeatedly loosened, and although refixed several times this did not save more than one-third of those inserted. As a consequence more attention will be paid to the summer propagating, and others will do well to follow the example set, the aim being to secure as many dwarf Roses as possible, so as to be quite independent of the uncertain Briar and Manetti stocks. Plenty of cuttings are generally available for the method shortly to be described—many more, in fact, than can be found suitable in the autumn. Every shoot that has perfected a bloom is in the best possible condition for making into a cutting, and these should be taken with a heel or small piece of old wood attached, preserving the leaves and shortening to about three joints. Short firm lengths without a heel will also strike freely, these being cut cleanly across below a joint, and two or three sound leaves preserved.

It is of the greatest importance that the cuttings be inserted directly they are made, as should they flag badly, or be allowed to shrivel, however slightly, failure is certain. The first proceeding, therefore, should be to prepare deep boxes or handlights for their reception. Set these close to the foot of a north wall, or where little or no sunshine will reach them, not less than 3 inches of fine fresh loam with plenty of road grit or sharp sand being placed in, this being faced with more of the grit or sand. Then collect, prepare, and at once insert the cuttings with the aid of a blunt-pointed dibber. They may just touch each other all round, should press against the bottom of the holes, and have the soil firmly fixed about them. After being watered the boxes ought to be closely covered with squares of glass, or the handlights closed, neither being opened until the cuttings either need water or are rooted.

In this manner a number of serviceable little plants will be obtained suitable alike for planting out or pot culture. Very few varieties fail to strike when treated in this way, but those which never fail are Comtesse d'Oxford, John Hopper, Souvenir de la-Malmaison, Etienne Levet, Charles Lefebvre, Captain Christy, La France, Madame Eugène Verdier, Gloire de Dijon, Maréchal Niel, Général Jacqueminot, Beauty of Waltham, Marie Baumann, Alfred Colomb, François Michelon, and Duke of Edinburgh.—W. I.

ROSES IN WINTER.

From June when Tea varieties are given abundance of air by day the advantages of moisture-holding floors over those that are flagged with stone, tiled, or cemented will be apparent to growers. When the doors and ventilators are open the moisture of the house is rapidly evaporated by the external atmosphere—that is, during bright dry weather. Fancy floors are dried almost as quickly as water can be poured upon them. If a certain amount of moisture is not maintained by frequently damping the available space there is quickly a very suitable atmosphere for the development and progress of red spider. Floors formed of ashes or gravel will hold ample moisture for the day at least, damping and syringing morning and afternoon being sufficient, but it is important that the syringe be used liberally once daily in order to keep the foliage free from red spider.

Red spider is much more likely to be a source of annoyance from the time liberal ventilation is given than earlier in the season. This being one of the worst enemies of the Rose under glass it must be watched for and exterminated directly it appears. There are many insecticides recommended for this purpose, and I have no word to say against any of them, but nothing surpasses a solution of powdered sulphur and water either for cheapness or effectiveness. A 2½-inch flowerpotful in each gallon of water, kept well stirred, and the plants thoroughly syringed, is enough to destroy red spider. The sulphur should be mixed like paste with a little water, and then the remainder added. The under side of the leaves must be well syringed with the solution, which must be allowed to remain on one, two, three days, or longer according to the weather. A bright sun is necessary to bring into full force the insect-destroying qualities of sulphur applied on this principle. No harm will be done by leaving it on, and therefore when once applied it can remain for three days if bright, and then thoroughly wash the plants with the hose or syringe. This is the only solution I have used for years whether spider makes its appearance on Roses, Vines, Peaches, Cucumbers, or any other plants, and have never known it fail. It is practically useless if the plants to which it is applied are shaded.

The borders in June may be mulched as a preventive of red spider. This will also prove beneficial to the plants by the retention of moisture about their roots without having constantly to water them or damping the surface, beyond the ordinary syringing. To apply rich manure as a surfacing in the plant's present condition would be injurious rather than beneficial. The border should be sufficiently fertile for at least the first two seasons; at the same time I am no advocate for borders being made too rich, which will encourage strong but soft growth that cannot be matured properly. All that is needed is to check rapid evaporation from the border. Manure that has been used for hotbeds, the refuse of Mushroom beds, anything of this nature, will accomplish the object in view.

While considering the summer treatment of the plants the question of shading them from the burning rays of the sun may be briefly considered. In houses that can be liberally ventilated no shade is needed. Full light and sunshine are essential to solidify and mature the growth as it is made. Tea Roses under glass in good health and condition will persist in growing later in the season than is desirable when the plants are subjected to early forcing, and shading, even if only slight, would encourage this tendency. It would delay the maturation of the wood until later in the season, and thus rob the plants of a portion of their rest that is so necessary to health, vigour, and good blooms the following season. Whether shade would be advantageous or the reverse when Roses are grown in houses provided with little or no ventilation is a matter that at present I cannot well answer; but it is certain that while such structures are admirably suited for forcing the Rose during the early part of the season they are not suitable during summer. I would not advise their construction, as although Roses may do well in them for a few years they are too confined for a hardy plant, and this means weakening their constitution and finally early death.—Wm. Bardney.

[Our correspondent's reply to "S. S." (page 30), is received, but cannot be inserted this week.]

(To be continued.)

WINCHESTER.—July 12th.

Like many other shows this year, this suffered materially through the extraordinary inclemency of the weather, and the majority of exhibitors who had entered were unable to compete in several of the classes; yet those who did stage blooms acquitted themselves well, and the Show on the whole was quite equal to this year's average of "provincials," if not above it. The collections were staged in the Guildhall, a fine building; but the arched roof being opaque, and one side nearly destitute of windows, the light streaming in from the other rendered the work of judging easy of those classes that faced it; but in the case of those facing the opposite direction the work was unusually difficult, and even the experienced Mr. D'Ombrain has perhaps not often had his faculties more greatly taxed in adjudicating. He, however, made no mistake, but the officials did in one instance in placing the second-prize card on a box to which no prize was given, though it was awarded to another stand of the same exhibitor, so no harm was done to him, though some of the on-lookers must have wondered "what the Judges could have been about" in that particular class. As an instance of the falling-off in exhibits only two lots of seventy-two blooms were staged out of seven entries, and more than half of the entries were withdrawn at the last moment from several other classes owing to the wet and extremely cold weather of the few preceding days.

In the great class in which prizes of £6, £5, and £3 were generously offered by R. Moss, Esq., M.P., Mr. Frank Cant, who appears to be in the ascendant this year, scored another triumph. The blooms were not "heavy" but remarkably fresh, and the darks very rich in colour. Mr. B. R. Cant secured the second prize, his stands containing several very fine blooms, though the weather had been cruel to many. In the class for thirty-six Roses, distinct, the last-named exhibitor won the first position with very fine blooms, Messrs. Keynes, Williams & Co. following with fresh but smaller examples; but in the next class of twenty-four blooms they took the lead with extremely neat, fresh, clean, and rich blooms, Mr. G. Prince being a dangerously close second with a somewhat heavier stand. For twelve H.P.'s of one variety the first and second prizes fell to Messrs. B. R. Cant and G. Prince respectively, both for Merveille de Lyon. We failed to obtain the name of the third prize-winner in this class. The corresponding prizes for twelve dark Roses were won by Mr. F. Cant, Mr. B. R. Cant, and Mr. E. Hillier, in the order named, the two former staging Ulrich Brunner, the latter A. K. Williams, all good.

In the next class, and a wonderfully good one it was, of twelve Teas or Noisettes (triplets), Mr. Prince was first with blooms of commanding excellence. Comtesse de Nadaillac, Catherine Mermet (fine), Princess of Wales, Souvenir Thérèse Levet (glowing crimson), Innocente Pirola, François Kruger, Madame de Watteville (extra fine), and Madame C. Kuster were particularly noticeable in the collection. Mr. F. Cant was second with fine blooms, especially of Madame de Watteville, Madame Bravy, Catherine Mermet, and Rubens; Rev. F. R. Burnside following with very neat, clean, even, but rather small blooms, good enough, however, to have won a higher position at many shows. In the class of twelve of any variety, Mr. F. Cant was first with Madame de Watteville, the petals twisted and spread out like wings, a charming stand. Mr. Prince was second with Souvenir d'un Ami, and Mr. B. R. Cant a very close third with Niphetos. Still referring to the Teas and Noisettes, in the class not open to nurserymen, Mr. Burnside well won the chief position with twelve blooms, staging admirably Catherine Mermet (not a very large, but finely built bloom, to which the N.R.S. silver medal was awarded), Edith Gifford, Madame Cusin, Maréchal Niel, Madame Bravy, Souvenir de Paul Neyron, Souvenir d'Elise, Innocente Pirola, Madame Furtado, Souvenir de Thérèse Levet, Princess of Wales, and Madame de Watteville. Mr. F. W. Flight, Twyford, a most successful local grower, was second in this class, but first in the classes for twelve blooms in six, and for six blooms in three varieties, staging Madame Lambard, Catherine Mermet, Jules Finger, Edith Gifford, Madame de Watteville, and The Bride in excellent form.

In the amateurs' classes for thirty-six blooms Capt. Ramsey, Fareham, was first with very fine examples, notably of Baronne de Rothschild, Devienne Lamy, A. K. Williams, Merveille de Lyon, Adam, and Grace Darling; Mr. Flight following, his stand containing one of the finest blooms of the year of Merveille de Lyon, well winning the N.R.S. silver medal for the best H.P. in the Show. Mr. R. E. West was the remaining prizewinner with small fresh blooms. Mr. Flight was first with twelve triplets, a very good stand; and for twelve blooms the prizes went to D. Seaton, Esq., Bitterne; Rev. C. Eddy, Bramley, Basingstoke; and Mr. F. C. Birch, respectively, all staging neat fresh examples. An extra prize was granted in this class to Mr. Chaloner Shenton, his first exhibit, and as such most creditable, as the blooms, which were very fresh, were admirably arranged.

There was great competition in the class for twelve bunches of cut flowers, hardy or tender, Mr. Flight being placed first, and Mr. G. A. Inglefield, Tedworth Gardens, second. The Misses A. and B. Flight had the best stands of flowers for the table, and it is not often that greater taste in arranging flowers with Grasses and Ferns is exemplified than by the deft fingers of these ladies. Mr. C. Neville, Mr. Flight's gardener, won the chief prize for Ferns; and Mr. W. Wareham, gardener to T. C. Burnell, Esq., that for Tuberous Begonias. Mr. E. Hillier, nurseryman, had the best bouquet, and otherwise contributed effectively to the furnishing of the hall.

Collections of fruit were very good indeed, notably the first, staged by Mr. W. Allen, which contained excellent Grapes, a splendid dish of President Strawberry, a capital Blenheim Orange Melon, highly coloured Violette Hâtive Peaches, and Elruge Nectarines. Mr. Mildon, gardener to Mrs. Turnor, Kings Worthy, and Mr. Inglefield followed in the order named, the Alexandra Noblesse Peaches of the former being remarkably fine, and of the latter the black Grapes and Strawberries arrested attention. In the classes for Grapes Mr. Mildon was first with Black Hamburgh, good, and Foster's Seedling, with remarkable berries; Mr. W. Allan, gardener to Sir G. Russell, Swallowfield, following with good examples, his bunches of Foster's being large and full.

Vegetables were excellent, Mr. Pope, Highclere Gardens, winning the chief prize for nine dishes with first-rate examples of Cauliflowers, Onions, Turnips, Carrots, Beans, Tomatoes, Peas, Cucumbers, and Potatoes, followed closely by Mr. Inglefield and Mr. R. Lye. The Gardens, Sydmonton Court, Newbury. There was good competition and superior

produce staged for Messrs. Sutton & Sons' prizes, which were won by Messrs. Lye, Pope, Inglefield, and Dauncey in the order named.

The Show was noteworthy by the absence of inferior exhibits, and the Winchester Horticultural Society deserves the support of the inhabitants and cultivators of the district of which the historic old city is the centre. Mr. Chaloner Shenton is the courteous Secretary of the Society.

CARLTON-IN-LINDRICK.

THE third annual Show was held on Thursday last, but owing to the lateness of the Roses and the previous stormy weather the Show was not quite up to the expectation of the Committee. Several nurserymen were unable to compete. Mr. Frettingham of Beeston was the principal prizetaker in the nurserymen's class, and Messrs. Fisher, Mallender, Western, and Machin were the prizetakers in the open amateurs' classes. Some very good blooms were shown in the cottagers' classes. The best Rose in the Show was found in Mr. Frettingham's box, a Heinrich Schultheis, a very beautiful Rose. Miss Mellish, Hodsock Priory, and H. V. Machin, Esq., Gateford Hill, each showed a collection of garden Roses.

GLOUCESTERSHIRE.

IT is to me a peculiar satisfaction to be able to record a completely successful result of the zealous exertions of my friend the Rev. F. A. Burnside, for when the Moreton-in-the-Marsh Show collapsed—for there, neither would Mahomet go to the mountain nor the mountain to Mahomet—Roses were brought together, but nobody came. Seeing this I advised Mr. Burnside to try Gloucester, with the result that he and his friends set vigorously to work. They obtained promises of support from all quarters, and although the weather has been of the most damaging description, yet most certainly the best provincial show that I have as yet attended, both in the number and quality of the flowers, was that held on Tuesday last at the Corn Exchange, Gloucester. By-the-by, an amusing incident occurred to me in connection with it. I was under the impression that it was to be held at the Shire Hall, and so wended my way there. I found a considerable crowd about, but I missed the green boxes which generally mark the presence of a Rose Show. However, I went in, and up the steps, where I came to a gate closed (which I thought rather an unusual precaution). A policeman was standing by, who on my saying I wished to go in, said there was no admission. "But I am one of the Judges." Whereat X 52 shook his head, and said that wo'n't do, and I daresay thought me a wicked old parson for telling him such a "crammer." I then found that the assizes were going on, and that I had innocently enough passed myself off as Judge Denman. I had a good laugh, and then wended my way to the Exchange. Here all was bustle and hurry of the right sort, boxes in all directions, a "hurrying to and fro," and excitement all round. The room was an excellent one, with a capital overhead light, and the flowers looked well; and although one is accustomed to see what can be done by Rose growers under the most adverse circumstances, I was utterly unprepared for the cleanliness and freshness of the blooms. One exhibitor, who mulches his beds, and thus saves them a good deal from the splashing caused by heavy rain, yet said that some of his blooms, 21 inches from the ground, were covered with mud, while hailstorms knocked others to pieces, but withal, both nurserymen and amateurs showed in excellent form.

Seldom has there been a keener competition than in the class for forty-eight blooms, nurserymen. There were six stands set up, and five out of the six ran very close upon one another, the first prize being ultimately awarded to Mr. Frank Cant of Colchester with a very fine stand of the following flowers:—Madame Marie Finger, Horace Vernet, Her Majesty, Earl of Dufferin, Captain Christy, François Michelon, Pride of Waltham, Etienne Levet, Catherine Mermet, Louis Van Houtte, Duke of Teck, Ulrich Brunner, Niphetos, Général Jacqueminot, Maréchal Niel, Sultan of Zanzibar, Madame Gabriel Luizet, Violette Bouyer, Prince Camille de Rohan, Madame de Watteville, Duke of Edinburgh, Madame Lambard, Mary Bennett, Earl of Pembroke, Merveille de Lyon, A. K. Williams, Madame Cusin, Exposition de Brie, Souvenir d'un Ami, John Bright, Rubens, Fisher Holmes, Madame Isaac Pereire, Dr. Andry, Viscountess Folkestone, Camille Bernardin, Grace Darling, Beauty of Waltham, Marguerite de Roman, Rosieriste Jacobs, Mrs. Baker, Marie Verdier, Madame Alphonse Lavallée, Victor Hugo (a magnificent bloom of a grand new Rose), and Souvenir d'Elise. Messrs. Paul & Son were second, and Mr. B. R. Cant third. In the class for twenty-four trebles Messrs. Paul & Son were first with a good stand of Captain Christy, Etienne Levet, Madame Bernardin, Marshal P. Wilder (very like Alfred Colomb), E. Y. Teas, Her Majesty, Ulrich Brunner, Heinrich Schultheis, Duke of Edinburgh, Général Jacqueminot, Madame Eugène Verdier, Alfred Colomb, Senateur Vaisse, Duchesse de Morny, François Michelon, Charles Lefebvre, Niphetos, Prince Camille de Rohan, Pride of Waltham, Marie Baumann, La France, and Mrs. John Laing. Mr. B. R. Cant was second, and Mr. F. Cant third. In the class for twenty-four Messrs. W. J. Jefferies & Son of Cirencester were first with Ferdinand Chaffolte, François Michelon, Duke of Edinburgh, La France, Madame H. Jamain, Comtesse Tretiakoff, Madame Eugène Verdier, Mary Pochin (very pretty), Merveille de Lyon, Etienne Levet, Madame Gabriel Luizet, Comte Raimbaud (which has been shown very fine this season), Elie Morel, Earl of Pembroke, Richard A. Sutton (a Rose I do not know, but I believe a seedling of Frettingham's), Queen of Queens, E. Y. Teas, Lady Mary Fitzwilliam, Madame Charles Wood, Jean Ducher, Rosieriste Jacobs, and Marie Verdier. For the best twelve of any one kind, double, Mr. B. R. Cant was first with A. K. Williams, Mr. Frank Cant second with Louis Van Houtte, and Messrs. Paul & Son third with Marie Baumann. For the best twelve blooms of any sort, Mr. B. R. Cant was first with Merveille de Lyon, Messrs. Paul & Son second with La France, and Mr. Cranston third with Merveille de Lyon.

In the amateurs' classes Mr. W. G. Grant of Ledbury took the leading position. His stand of twenty-four was an excellent one, much in advance of the forty-eight he showed at the Crystal Palace. It comprised fine blooms of Marie Baumann, Charles Lefebvre, Heinrich Schultheis, Senateur Vaisse, La France, Général Jacqueminot, Mrs. John Laing, Etienne Levet, Duchesse de Morny, Duke of Edinburgh, Souvenir d'un Ami, Horace Vernet, Madame Gabriel Luizet, A. K. Williams, François Michelon, Comte Raimbaud, Marie Verdier, Duchess of Bedford, Baroness Rothschild, Dr. Andry, Le Rhone, and Merveille de Lyon. Mr. T. B. Hall of Larkwood, Rockferry, was second. Mr. Grant was again first for twelve trebles, showing fine blooms of Ulrich Brunner, Etienne Levet, La France, Louis Van Houtte, Madame Gabriel Luizet, Général Jacqueminot (very fine), François Michelon, Merveille de Lyon, Duke of Edinburgh, Dupuy Jamain, and Madame Eugène Verdier. Dr. Budd of Bath was second, and Mr. T. B. Hall third.

In the Tea and Noisette some good stands were set up, although many of the blooms had suffered from the bad weather. In the nurserymen's division for eighteen Teas or Noisettes, Mr. Geo. Prince was first with some of his usually fine blooms, consisting of Catherine Mermet, Hon. Edith Gifford, Souvenir d'un Ami, Alba Rosea, Comtesse de Nadaillac, Niphetos, Jean Ducher, Rubens, Innocente Pirola, Marie Van Houtte, Madame Cusin, Souvenir de Sarah Prince, a white sport of Souvenir d'un Ami, and named in remembrance of one whose memory many rosarians cherish; Francisca Kruger, Madame Caroline Kuster, Madame de Watteville, and The Bride. Mr. Frank Cant was second, and Mr. B. R. Cant third. For the best twelve Messrs. Jefferies & Son were first with Madame Lambard, Rubens, Souvenir d'un Ami, Niphetos, Perle des Jardins, Princess of Wales, Sunset, Maréchal Niel, Catherine Mermet, Madame Cusin, and the Hon. Edith Gifford.

In the amateurs' class, Mr. W. G. Grant was again first for the best eighteen, with a fine box containing Rubens, Souvenir d'un Ami, Souvenir d'Elise Varden, Madame de Watteville, Madame Cusin, Maréchal Niel, Madame Lambard, Madame Caroline Kuster, Francisca Kruger, Hon. Edith Gifford, Comtesse de Nadaillac, Anna Ollivier, Amazone, Souvenir de Thérèse Levet, Souvenir de Paul Neyron, and Devoniensis. The Rev. F. R. Burnside was second for the best twelve. Mr. W. G. Grant was again first with Souvenir d'un Ami, Souvenir d'Elise Varden, Madame Lambard, Niphetos, Comtesse de Nadaillac, Rubens, Souvenir de Thérèse Levet, Marie Van Houtte, Madame Cusin, Amazone, and Madame Caroline Kuster. Mr. E. Claxton was second, and the Rev. F. R. Burnside third. For six blooms of any one Tea or Noisette, Mr. W. G. Grant was first with Souvenir d'un Ami, Mr. Claxton second with Alba Rosea, and Dr. Budd third with Francisca Kruger.

The success which has attended this first show both florally and financially will no doubt encourage its promoters to go on and prosper. It is in good hands, and despite the gloomy anticipations of some it was an undoubted success. I shall ever remember it, for it was the occasion of my meeting one whom I had never seen since we formed two of a very happy party who went to the Eglinton tournament in 1839—nearly fifty years ago.—D., *Deal*.

BEDFORD AND BEDFORDSHIRE HORTICULTURAL SOCIETY.

THE annual Show of this Society was held on Wednesday last in the New Park, Bedford, on which day the park and the new suspension bridge over the Ouse were opened by the Marquis of Tavistock, and in the evening an illuminated river fête took place. The weather, however, on this Bedford red letter day will long be memorable as probably the most unseasonable July day of the century. The Show was a very extensive one, and although Roses constituted only comparatively a small part of the extensive display, they are annually becoming a most important feature here, and a large tent had this year to be devoted to them, as there are open classes in this department also for cut herbaceous flowers and stove and greenhouse plants.

In the open class for nine stove and greenhouse plants, not less than six in bloom, there were two competitors—Mr. J. F. Mould of Pewsey, Wilts, who secured the first prize with well grown plants, including a fine Cycas revoluta, Dracophyllum gracile, Cocos, Ericas, Statice profusa, Vincas, and Hedaroma fuchsioides; and Mr. H. James of Lower Norwood, who was second with a grand Latania borbonica and several fine but less regularly matched plants. In the division open to amateurs and gentlemen's gardeners (locally), Mr. C. Ellis, gardener to Mr. Lethbridge, Pemberley, Bedford, was first for a group not exceeding 60 square feet, his space being closely and richly furnished. Mr. Waller, gardener to James Howard, Esq., Clapham Park, Bedford, being second with a fine but lighter display; Mr. Robinson, gardener to F. Howard, Esq., Abbey Close, Bedford, following close for third place, and Mr. R. Day, gardener to Joshua Hawkins, Esq., Mayor of Bedford, came fourth. For six foliage plants in the same division Mr. G. Vyne, gardener to C. Franklin, Esq., Bedford, was first, and Mr. Robinson second. Fuchsias were well shown in this division, Mr. W. Galloway, gardener to Miss Rice-Trevor, Bromham Hall, and Mr. Robinson having each six large well-trained specimens in good bloom, and were placed respectively first and second.

Roses in the open classes were well represented, the blooms throughout the Show being above the average of exhibits held during this variable weather, the colours of the H.P.'s bright, and the winning stand of forty-eight Roses from Mr. F. Cant of Colchester was in keeping with his previous displays this season. There were no less than eleven

entries in this class despite the weather, Mr. F. Cant of Colchester leading with grand blooms of Madame G. Luizet, A. K. Williams, François Michelon and Ulrich Brunner, both striking flowers; Victor Hugo and Pride of Reigate also good; Beauty of Waltham, Louis Van Houtte, Marie Verdier, Marie Baumann, Merveille de Lyon, Souvenir d'Elise, Horace Vernet, Jules Finger, Dupuy Jamain, Grand Mogul, Heinrich Schultheis, Rosieriste Jacobs, Annie Laxton, Dr. Andry, The Bride, Souvenir d'un Ami, Viscountess Folkestone, Dr. Sewell, Etienne Levet, Catherine Mermet, Duke of Edinburgh, Madame Ducher, Marie Finger, and Ferdinand de Lesseps, &c. Messrs. G. & W. H. Burch, Peterborough, had also fine flowers and obtained second place, A. K. Williams, J. S. Mill, Madame Eugène Verdier, Heinrich Schultheis, Niphetos, Xavier Olibo, Rubens, Due de Rohan, Duchess of Bedford, and Mdlle. Marguerite Dombrain being the most conspicuous. Mr. W. H. Frettingham, Beeston, Notts, also showed well and secured third prize.

For eighteen Teas in the class open to all Mr. F. Cant, who was first, had some wonderfully clean blooms, including very fine Souvenir d'Elise, Jules Finger, Madame Cusin Rubens, Madame Lambard, Madame de Watteville, Souvenir d'un Ami, Souvenir de Paul Neyron, Maréchal Niel, The Bride, Catherine Mermet, Adam, and Devoniensis. Mr. J. Mattock, Headington, Oxon, was second, and Messrs. Burch third.

For twenty-four Roses in the open class for amateurs Mr. W. H. Lindsell of Hitchin was in fine form, having in his winning stand superb blooms of La Franée, Princess of Wales, Annie Wood, Maréchal Niel, Louis Van Houtte, François Michelon, Horace Vernet, and Her Majesty. The Rev. J. H. Pemberton, Havering-atte-Bower, coming second; Marquise de Castellane, A. K. Williams, E. Y. Teas, Madame G. Luizet, Horace Vernet, Mrs. Baker, and Countess of Rosebery being the best of a very good stand. Mr. J. L. Curtis of Chatteris, came third, and his blooms as seen in the after part of the day were well sustained, and would not then have discredited an award of first. He had a remarkable bloom of Olivier Delhomme, Her Majesty, Etienne Levet, Marie Baumann, Niphetos, Baron A. de Rothschild, and Madame C. Crapelet in excellent form.

For twelve Roses, open to all amateurs, Mr. E. Mawley, Berkhamstead, was first; Mr. W. O. Times, Hitchin, second; and the Rev. F. H. Gall, Hitchin, third. For twelve Teas and Noisettes in the same division, Mr. Lindsell was first with very fine blooms, Jean Ducher, Niphetos, Souvenir d'un Ami, Rubens, Comtesse de Nadaillac, Amazone, Catherine Mermet, and Maréchal Niel being particularly good. The Rev. W. H. Jackson, Stagsden Vicarage, Bedford, who had what in an ordinary contest would have been a winning stand, was placed second, having grand flowers of Belle Lyonnaise, Madame Thérèse Levet, Madame Lambard, Amazone, Innocente Pirola, and Souvenir d'Elise; Mr. J. L. Curtis coming third. In the local amateurs' classes for twenty-four cut Roses and for twelve Teas and Noisettes Mr. Jackson was again first, and for twelve cut Roses Mr. G. Dyer, gardener to G. W. Repton, Esq., Odell Castle, Beds, took the lead. In the class open to all England for thirty-six bunches of cut hardy herbaceous or bulbous flowers there was a good display, Messrs. Paul & Son of The Old Nurseries, Cheshunt leading with large and striking masses of blooms, the following being especially attractive—viz., Epilobium angustifolium album, Tropæolum polyphyllum, Delphinium grandiflorum plenum Le Vésuve, Chrysanthemum maximum, Tritoma caulescens, a very bold flower, and the earliest of the race; Potentilla Wm. Robinson, Alstrœmeria aurea, Orchis foliosa, and Erigeron speciosus superbus. Messrs. Burrell & Co. Howe House Nurseries, Cambridge, also made a grand show, and secured second prize, Iris Angliea, Horatius, Queen of Lilacs, and Madame Patti being very striking varieties; Centaurea montana rubra, Achillea millefolium rosea, Astrantia major, Papaver nudicaule miniatum, deep orange, and Lilium Thunbergianum Prince of Orange were also staged in very showy masses. Mrs. E. Horton, Bedford, was third with a most creditable stand. Messrs. Laxton Bros., Bedford, also showed a large collection, not for competition, including some fine Clove-like seedlings from Mrs. Sinkins Pink, and remarkably bright and distinct Gaillardia grandiflora in variety.

There was a considerable show of locally grown fruit, but the want of sunlight and recent low temperature had evidently made itself apparent, the Grapes especially showing want of colour and finish. For a basket of fruit, six kinds, Mr. Ellis was first, Mr. Day second, and Mr. Galloway third. Mr. Galloway was first for two bunches of black Grapes and for Melons. Mr. W. Allis, gardener to Major Shuttleworth, Old Warden, Beds, was first for six Peaches and for three varieties of Strawberries, consisting of well-ripened fruits of Amateur, Captain, and President, Mr. Dyer being first for a single dish of Sir Joseph Paxton. Vegetables were a very large and good feature at the Show. For a collection of twelve fruits in the leading amateurs' class Mr. Waller was first with an excellent stand; Mr. Musgrave, gardener to A. D. Chapman, Esq., Milton Ernest Hall, Beds, second; Mr. Ellis third, and Mr. Vyne fourth. In the competition for prizes offered by Messrs. Sutton & Sons, Reading, Mr. Musgrave was first; Mr. Herman, gardener to Griffith Jones, Esq., Goldington Bury, Beds, second; Mr. Allis third, and Mr. Robinson fourth. For a collection of six varieties of Potatoes Mr. Waller took the lead, Mr. Robinson was second, and Mr. Vyne third. For a basket of salad, six varieties, Mr. Waller was again first, Mr. Robinson second, and Mr. Vyne third. Neither Potatoes nor Peas were shown of their usual size and quality, and it was noticeable that the large-podded sorts of Peas were generally badly filled and had to give place to those of the Fillbasket type, which appears to be particularly good this season.

Amongst the miscellaneous exhibits Messrs. E. & F. Newton, Horticultural Builders, Hitchin, showed specimens of their patent system of glazing without putty, which has been tested and approved by a sub-Committee of the Royal Horticultural Society; and Mr. W. Day of Bedford also exhibited specimens of his useful and simple patent plant trainer.

CHISWICK SHOW.

JULY 12TH.

THIS vigorous Society held its Summer Show in the Gardens of the Royal Horticultural Society at Chiswick on Thursday last, the 12th inst., and though the weather was far from favourable, there was a cessation of rain for a period during the afternoon which enabled many persons to visit the exceedingly attractive and varied Exhibition. Three large tents were occupied with groups, flowers, and cottagers' productions. The conservatory also was nearly filled with more delicate plants, fruit, and vegetables, the quality throughout being of a high character. The arrangements were good, and creditable alike to the Hon. Secretary, Mr. Joseph Fromow, and his willing assistants.

The special interest of the Show centred in the groups of plants arranged for effect (100 square feet) in which class the first prize was a Jubilee challenge cup, value 20 guineas, presented by Mrs. S. A. Lee, and a money prize of £4. The cup is to become the absolute property of the exhibitor who wins it three times, not necessarily in succession, and as Mr. W. Brown of St. Mary's Grove Nursery, Richmond, won it last year in a keen competition, many were interested in learning whether he would retain the prize this season. There were only three competitors, but two of these—namely, last year's winner and Messrs. Hooper & Co., Covent Garden, contributed two such beautiful and evenly balanced groups that it became rather doubtful which would be successful. There were very few points to choose between them, but ultimately the Judges gave a generally approved decision in Mr. Brown's favour, who has thus but one more victory to achieve to fulfil the somewhat arduous terms of the class. The winning group was faultless, and as it deserves more attention than can be given in this report, it is described at length on page 42, together with that for which Messrs. Hooper & Co. secured the second prize, and that from Mr. J. Fromow, Sutton Court Nursery, Chiswick. There was also a class for smaller groups (60 square feet), and in this H. J. Atkinson, Esq., Gunnersbury House (gardener, Mr. Hudson), was first, winning the Royal Horticultural Society's silver medal and money prize. The group was a well-finished and graceful one, Crotons, Palms, Draeænas, and Ferns forming the principal foliage plants, with them being associated a few Eucharises, Liliums, and Cattleyas, margined with Gloxinias, Adiantums, Cyrtodeira fulgida and Panicum. E. H. Watts, Esq., Devonhurst (gardener, Mr. A. Wright), was second with a bright arrangement of Kalosanthes, Gloxinias, and Odontoglossum vexillarium edged with Panicum and Caladium argyrites.

Stove and greenhouse plants were well shown by Mr. Bates, Poulett Lodge Gardens, Twickenham, who won first honours for six specimens, H. Little, Esq., having the best three specimens, and Mr. Chadwick the leading six fine-foliage plants. Mr. H. Little was also a successful exhibitor of Tuberous Begonias, Pelargoniums, and Orchids, being followed in the last named class by Messrs. Cowley and Prewett. Fuchsias, Caladiums, Coleuses, and other plants were fairly represented from several exhibitors. The non-competing exhibits of plants were numerous. Messrs. Rothschild, Gunnersbury Park, Aeton (gardener, Mr. Roberts), had an extensive and effective group. The Marquis of Bute, Chiswick House (gardener, Mr. May), also had a tasteful arrangement of plants. Messrs. J. Veitch & Sons, Chelsea; B. S. Williams, Upper Holloway; Lee & Son, Hammersmith; Rumsey, Waltham Cross; Hooper & Co., Covent Garden; and C. Turner, Slough, similarly contributing groups of plants and collections of Rose blooms.

Prizes were offered by the Duke of Devonshire for the best three stands or vases of flowers and foliage for the dinner table, and first honours were accorded to Mrs. Hudson for a very graceful arrangement. Tall single slender trumpets rose from a dish at the base, the stems wreathed with Asparagus, the top lightly filled with white and red Rhodanthes with a small stem or two of the bright red Chelone barbata and Adiantums, A. caudatum drooping round the edge, the base being filled with large and handsome white Water Lilies, a few sprays of Nemophila insignis, red Rose shoots, a few Cattleyas and nodding Brizas. Mr. J. Prewett was second with pleasing stands that were much admired. Mr. Chadwick was third, a preponderance of white flowers rendering his stands rather dull. For three bouquets Mr. Prewett was first, followed by Mr. Gardiner and Mrs. Mott. Buttonholes were well represented, an exceedingly handsome basket of Roses gained Miss S. A. Fromow the first prize in that class.

In the fruit classes Mr. Bates won first honours for six dishes, comprising Foster's Seedling and Alicante Grapes, Lord Napier Nectarine, a good Queen Pine Apple, President Strawberries, and Stirling Castle Peaches. L. J. Baker, Esq., Ottershaw Park, Chertsey (gardener, Mr. Osman), and Mr. C. J. Waite, Glenhurst Gardens, Esher, were the other two prizetakers in the order named. Messrs. Osman, Milsom, Bates, and Radley were the winners in the class for black and white Grapes; Mr. W. Palmer leading for two dishes of Strawberries with Auguste Nicaise and President, both fine, but the former especially so. Mr. Waite was as usual very successful in the vegetable classes, both for the prizes provided by the Society and those offered by Messrs. J. Carter & Co. Messrs. Sutton & Sons also offered prizes for Tomatoes, which brought several competitors, and the cottagers' classes were well filled.

OSTROWSKIA MAGNIFICA.

NOVELTIES so distinct in character as the beautiful plant recently exhibited under the above peculiar generic name by Messrs. J. Veitch and Sons of Chelsea are rarely seen, and quite a little crowd of admirers gathered round the box containing the specimens at the Westminster Drill Hall on the 11th inst. Gardeners will search in vain in their Paxton's or Johnson's Dictionaries for the Russian-looking title bestowed upon the plant, and except to a few specialists amongst hardy flowers, who watch the continental works and catalogues closely for novelties, the name will, like the plant, be a total stranger at present. It is not likely to remain so long, as the gigantic campanulaceous flowers are followed by proportionately huge pods of seed, and stock will in a season or two be abundant enough. Even now it seems that though the plant has only been in the hands of the nurserymen for a comparatively



FIG. 6.—OSTROWSKIA MAGNIFICA.

brief time, it is sufficiently cheap to be catalogued in continental trade lists, and it will soon appear in those published in this country.

The plants exhibited at Westminster were certificated, and Messrs. Veitch stated that it was a native of Central Asia, whence it appears seed was sent to Russia and Germany, and it was received in England through Max Leichtlin of Baden. It is a perennial, and said to be quite hardy, the plants grown by Messrs. Veitch being the first to flower in this country. The flowers are somewhat suggestive of Campanula macrostyla, the corolla shallow, 5 or 6 inches across, with seven or eight roundish lobes. The colour in the specimens shown was a soft mauve with slightly darker veins, but we believe that when described in the "Gartenflora" last year the colour was referred to as "dark blue." Probably it will vary from seed in the same way that other allied plants do. The stems are strong, 4 or 5 feet high, with oblong leaves arranged in whorls of four or more, and the flowers are borne either singly or in terminal racemes. It is unquestionably a noble and handsome plant, and as there is little doubt that it will prove as hardy as it is claimed to be, it may be expected to become a favourite in gardens.

ARTIFICIAL MANURES.

I CAN readily understand Mr. Coombe's disappointment after reading my recent contribution to the above subject. This he has by some ingenious means persuaded himself has been brought about by my sudden opposition to the use of "properly proportioned combinations." Now, I consider my opposition to the use of these fancy mixtures, as advocated by my too scientific friend, is by no means hidden—on the contrary, has been consistent throughout this discussion. Is it not possible that the enthusiasm of my opponent has been slightly checked by the arguments I have brought forward, and the hard facts that I have opposed to his pet theory? This view of the case is materially strengthened by the cautious way in which he has evaded many of my arguments, and, with one exception, he has refrained from replying to any of those in my last article. It has suited him better to take a hasty survey of the discussion, with the result that his fertile imagination has enabled him to conjure up a host of modes, practices, or systems championed by me at various stages of this discussion, whereas I have advocated but one—that of changing the food supplied to plants, according to the various stages of growth that they pass through and the changing circumstances by which they are surrounded. As I am by no means anxious to evade any portion of the arguments contained in his contributions, but I am rather glad to have so good an opportunity of confronting some of his erratic statements and impracticable theories, I think it my duty to take each paragraph as it stands, supply his omissions, and endeavour to find out where my opponent discovers the subtle distinctions he draws when enumerating the many systems he contends I have advocated.

The first is defined by my enlightened opponent as the "haphazard" one; the next, the "semi-artificial system," taking its name, we are told, from the faulty artificial manure being supplemented by natural liquid and solid manures. Now, the "haphazard system" may be considered a myth, as I have previously shown that the system of giving plants such changes of food as are known to produce good results cannot be a haphazard one. The "semi-artificial system" is rightly named, as it is the practice of giving plants the various changes of food advocated throughout, and not put forward after his first criticism, as Mr. Coombe asserts. In my original article I advised the use of artificial manures to be supplemented by the use of natural liquid manure. I still do so, not only as a matter of utility, but of economy also, as it should be the aim of all cultivators to turn to account the food contained in soil and in the natural manures at their disposal. As to calling up the names of successful cultivators to bolster up my cause, I ask Mr. Coombe what more effectual bolstering up could be given than by showing that the greatest horticultural achievements of modern times have been produced by the system he vigorously condemns? Surely he will admit that, no matter by what names successful practices are called, they will be generally accepted as the correct ones.

By some philosophical mode of reasoning, hitherto unexplained, my opponent next sees the "fad" and "experimental systems" unfolded. Now, if he can see the slightest difference between these two and the "semi-artificial system," I venture to assert his sagacity is more acute than that of the majority of readers. It all amounts to giving plants the changes of food I have advocated. But to show Mr. Coombe that he had not all the science on his side, I brought to his notice a few facts, which showed the system was compatible with theory in its best form, and while upholding the great usefulness of scientific knowledge in the manufacture and use of manures, showing that these "nicely proportioned combinations" are not necessary in practice provided the really important elements are present. The exact quantities of these can only be determined accurately by analysing all soils used, and that is, I think my opponent will admit, quite out of the question at present. If in the future sufficient scientific knowledge be acquired, and the means provided for gardeners to perform this operation, it would be rather a cumbersome and expensive system to reduce to practice, except for growing specialities on a large scale, and then comes the question. After all this scientific knowledge, would the results produced be as enthusiasts fancy? Would they pay their way? This I am willing to leave an open question.

I am not so much mystified as my adversary seems to imagine about the "chemical compounds" in themselves, but I am in total darkness as to how he would put his vague theories into practice, and I would suggest that in some future contribution Mr. Coombe will favour us with more definite information on that point. It cannot fail to be both interesting and instructive. When contemplating this subject in all its intricate bearings, I am led to think of my opponent, during the busy spring months, when the numerous occupants of greenhouses and plant stoves require potting, compounding his soils according to the p.p.c. system for potting the various plants that differ so widely in the elements of which they are composed. I can picture him measuring out, in the minutest proportions, the various earths, alkalies, acids, and salts, and mixing the ingredients into numerous heaps in readiness for the special subjects to be dealt with. After this troublesome part of the task is completed I venture to assert that the scene of these operations would present a spectacle hitherto unknown to the horticultural world. The plants are duly potted into this precious compound, and all goes on right for a time, but a suspicion gradually dawns upon the mind of my opponent that they are not making the progress they should do after so satisfactory a start on scientific principles; this puzzles him not a little, as he knows that he gave each the proper amount of potash, acids, phosphates, and ammoniacal and nitrogenous manures. Not being able to analyse the natural ingredients used, he was obliged to resort to the haphazard practice of either guessing at the amount of certain necessary elements the soils contained without the addition of other natural or artificial substances, or add a properly proportioned combination of the elements needed for the plants' support in an artificial state, without any regard for the quantities already in the soil. This must, of course, throw the combination altogether out of its proper proportion. But we will be charitable enough to suppose the disarrangement thus brought about was not enough in itself to produce very unsatisfactory effect upon the growth of the plants, yet still they do not progress so well as they should do. Being possessed of a laudable determination to find out some cogent reason why this is so Mr. Coombe has samples of his soils analysed, and in many cases he finds them altogether deficient in nitrogenous manures, although he gave them a properly proportioned quantity in the first instance; but, unfortunately, he had overlooked the fact that in giving plants artificial manures in a soluble form he places the whole quantity at their disposal, so that they could assimilate an unlimited quantity so long as it remained within their reach. Under these conditions the development of plant is regulated by the quantity of phosphoric acid, potash, &c., taken up daily, and also by the amount of warmth, light, and moisture brought to bear upon them. Now the case is quite different when the soil contains a sufficient quantity of nitrogen in an organic and insoluble form. From this store of nitrogen the soil prepares a little nitric acid daily, and regularly feeds the plant with a small quantity of soluble nitrogen.

This accounts for their behaviour under the circumstances above given. The soluble nitrogen being rapidly exhausted, and no further supply was within reach, hence the slow and unsatisfactory progress of the plants. It also shows clearly that the proper course to pursue is to combine certain parts of plant food together, and administer nitrogenous manures at various stages of their growth, according to the changing circumstances of each particular season, and when the sound practical judgment and didactic faculty of the cultivator shall show him they stand in need of it. And I maintain that by these means the highest results are obtainable from the resources at our command. It is on these lines that I consider scientific knowledge will lead to future advancement rather than aiming at such nicely proportioned combinations. The subject must be treated on broad lines rather than in petty adjustments. Pay particular attention to the important elements by which the growth of plants are built up until it can be clearly shown that these theories are necessary, and also that they can be reduced to a practical system, having advantages over those already practised. Now my opponent has advanced no argument whatever against my previous statement that while certain elements are absorbed by the soil, and only given up again in small quantities, while others remain freely moveable, and a residue not quickly taken up by the plant would be wasted. This in itself is sufficient to show the advantages of supplying manures in the way I have advocated. Neither has he challenged the statement that it is as yet quite unknown why a given crop sometimes takes up a much larger per-centage of soluble substances put into the soil.

All these interesting facts will well repay the careful consideration of Mr. Coombe before he can claim to be acting on lines so superior to those that have produced results which as yet scientific knowledge cannot surpass. In his enthusiasm he has also overlooked another trifling fact which I brought before him when stating in my last article that I failed to find a single instance in which he had taken into consideration the various stages of growth that plants pass through. This is to be regretted, as a study of chemistry, spasmodical or otherwise, shows how important the point is.

Returning to the lime question, my thanks are due to your correspondent for reminding me I have not yet cleared up the point in reference to its action on soils in regard to the idea of its causing moisture to be retained in land that it had been applied to with the object of renovating its fertility. This is no new idea, but has been taken advantage of by cultivators for grass, and in "Parke's Chemistry" the following explanation is given:—"When quicklime is spread upon land it destroys its causticity, the organisation of all animal and

vegetable matters remaining in the soil, and thus renders them a fit pabulum for the future crop. In like manner the lime would also burn up the tender shoots of fresh plants and sterilise instead of fructifying the ground; but Nature has so ordered it that as the lime falls to powder on the land it should gradually absorb carbonic acid from the atmosphere, which deprives it of its causticity and converts it into chalk. Hence lime and chalk are particularly useful on sandy soils." It is also an acknowledged fact that chalk when applied to heavy soils makes them less retentive of moisture, and light sandy soils more retentive.

Concerning the explanation advanced as to why plants of Erica hyemalis so frequently become candidates for the rubbish heap when they pass from the hand of the market grower, while those retained by those growers do not share the same fate. This explanation scarcely goes far enough. Granted that the flowers on the plants kept in the market growers' hands would be cut while in full beauty, while those in private establishments would not be cut back till the flowers faded, that might give those first named the chance of making stronger growth, but would not be sufficient to account for one set of plants dying while the others were making splendid growths. Neither does it show that the bulk of phosphoric and potassic constituents would have become absorbed by the vigorous growth promoted by the use of nitrate of soda, as we have kept plants in the same pots for two years without their showing any diminution of energy, although no other stimulant but nitrate of soda was used. But in the case of the market grower's plants they would be repotted to make larger specimens, and consequently have a fresh supply of the elements above mentioned in the soil. My answers to the questions at issue, as summed up by Mr. Coombe, I will give in as few words as possible. In reply to the query, Is a change of food necessary for plants? I think my arguments serve to show that if not absolutely necessary it enables us to produce the best results by turning the natural resources at our command to the most profitable use in a simple and practical manner, according to the varying stages of growth that plants pass through. As to the possibility of producing a perfect plant food, I consider it may be accomplished in exceptional cases, but would be too expensive a system to become general for all classes of plants. Thirdly, Will experience triumph over science? My firm conviction on this point is that they are dependent upon each other. Together they will help forward the march of gardening, and achieve the future triumphs of the horticultural world; and my concluding advice to my "scientific opponent," finds ready expression in the grand old motto, "Be just before you are generous." Do not let your generous enthusiasm for science lead you to deny to practical experience the just share of honour it must ever claim in the future achievements of gardening.—H. DUNKIN.

VEGETABLES FOR EXHIBITION.

TOMATOES.

THERE is no necessity to enlarge upon the merits of a good dish of Tomatoes and the weight it has in either a large or small collection of vegetables, as few need to be told how much judges are influenced by them. What we have to consider is how they may be produced in perfection when most wanted. Some seasons, such for instance as those of 1886 and 1887, very good fruits may be had late in July and during August from plants in the open air; but as a rule these ought not to be wholly depended upon, or the dish of prize fruits may not be forthcoming. At this time of year, or say from May to September inclusive, there is in numerous gardens a certain amount of house room that might well be devoted to the culture of Tomatoes. I do not assert that they are absolutely safe under glass, as of late years a disease known as Cladisporium fulvum has developed, proving even more destructive among house grown crops than even the better known Potato disease in the case of those grown in the open air. As a rule, however, the handsomest and best coloured fruits are obtained from plants under glass, and it is to the cultivation of these I shall principally devote this paper.

Forcing houses or high temperatures are not needed, Tomatoes doing better during the summer months in warm or sunny greenhouses, fruit houses, or pits and frames. Supposing the first dish is wanted early in July the seed should have been sown early in March, a month later being quite soon enough when the fruit is most needed during August. Being continuous bearing there is no harm done if the plants mature a few fruits before they are needed, but the first clusters are generally the finest, and we try to time these for the shows. Seed should be sown thinly and set in gentle heat to germinate. When the seedlings are in rough leaf they ought to be placed near the glass, and also thinned if need be, the aim being to keep them as sturdy as possible. First place them either singly in 5-inch pots or in pairs in 6-inch pots, using light loamy soil, and sinking the seedlings up to the seed leaves. Fine strongly rooted plants ought to be the result, and these require to be shifted into their fruiting quarters before they become badly root-bound. Whether they shall be fruited in large pots, tubs, boxes, or planted out must depend upon circumstances. Either of the former plans is suitable for greenhouse stagings, tubs or boxes, though rather unsightly, being, however, preferable as affording more root room and not requiring such frequent attention in watering.

When planted out the roots ought to be confined to a rather narrow border or ridge of soil, or otherwise the top growth is apt to be much too vigorous. To obviate the latter difficulty we usually place our plants in 12-inch pots, and set these on the borders. The roots soon spread into the soil underneath, but not to such an extent as to defeat the object in view. This plan is to be specially commended where the blank spaces on the walls and front trellises of Peach houses are utilised for Tomato culture, in which positions remarkably fine crops of fruit are frequently obtained. It is also advisable in the case of plants grown in pits in succession to Potatoes, Beans, or other crops, and which are to be trained over temporary trellises. A compost most suitable for Tomatoes consists of two parts of turfy loam roughly chopped up to one of old Mushroom bed manure, or some substitute for the latter, but any good loamy soil answers well. When first placed in either lightly drained pots, tubs, or boxes these should only be about three parts filled with soil, this allowing space for a good top-dressing of rich compost later on, or when the first clusters of fruit are set.

Much of the foregoing advice is offered too late to be of any real service this season, and I shall endeavour to remedy this somewhat by advising more fully upon the treatment of plants as they now are in many gardens, reserving comments upon the November crops for a separate paper. Overcrowding is one of the most frequent causes of failure, this being brought about either by planting too thickly, or by allowing much superfluous growth to form. The consequence of crowding in any way is weakly flowers and a poor set, and it often happens fewer plants or leading growths would have given much finer crops of fruit. I prefer training each plant to a single stem, or what is known as the single cordon system, and every strong plant in single rows may well be not less than 15 inches apart—this whether staked upright or trained up a roof, trellis, or wires. Such should have all side shoots cut or rubbed out as fast as they form, the lead only being unstopped. Thus treated, a series of strong bunches of bloom forms, this being followed by clusters of fine fruits. Where there is plenty of wall or roof space to be covered single plants may be allowed to form several leads, a distance of 12 inches dividing each reserved shoot, these to have all side shoots rubbed out as often as necessary. We have taken extra good crops from plants in pots set on a fruit border and trained thinly over a front trellis, and also from others rooting in boxes and set on a greenhouse stage. Not only is it necessary to keep all leading growths free of side shoots, which, if left for a few days even, much weaken the main stems, but it is also advisable in the case of very robust plants to either cut away some of the leaves, or to reduce their size somewhat. When growing strongly, as most Tomato plants now are, they require almost daily attention in the way of stopping and training, and a week's neglect may much injure them.

With many it is found a difficult matter to effect a good set, especially in the early part of the season. When, however, the plants receive abundance of room, sunshine, and air, plenty of pollen is formed, and this, being dry before midday, may be distributed by smartly tapping the stems or trellises, or the syringe may be employed for a similar purpose. Most varieties are apt to form one very large fasciated bloom, this, when reserved, taking the lead and much weakening the rest of the flowers that not unfrequently fall prematurely. Seeing that these ugly flowers are invariably followed by coarse and monstrous fruits, it is unwise to leave them on the plant, as large and handsome, and not rough misformed fruit, are required for exhibition purposes. Pinch them off as soon as detected, and the other well-formed flowers will soon be benefited thereby, and a cluster of perfectly formed fruit be the result. Two or three fruit in one cluster are usually ample, and early thinning should be resorted to.

A few other details yet remain to be briefly touched upon, top-dressing being one of the most important of them, no other plant being more quickly benefited by a timely addition to the surface soil. It is most needed when plants in pots or boxes have set their first fruit, while any, whether the plants or young or old, that are rooting in a small ridge of soil ought also to be top-dressed directly they give signs of partial exhaustion. The old soil underneath being kept properly moistened without much regard being paid to the state of the fresh compost, the roots quickly take possession of the latter, and a marked improvement in the appearance of the plants will soon be visible. Apparently worn-out plants may be quickly renovated with the aid of surface dressings, and be made to produce a good crop of handsome fruit. When growing strongly Tomatoes require plenty of water, and those well set with fruit should also have liquid manure frequently. Either farmyard, liquid manure, or any of the advertised artificial manures, are suit-

able, these being applied at the rate recommended by the vendors. Superphosphate is a very safe and good manure, this being mixed with the top-dressing compost at the rate of an 8-inch potful to two bushels of soil, or it may be frequently sprinkled on the surface of the soil and washed in gradually. The smooth round-fruited varieties are liable to crack badly before the fruits are ripe. This may be anticipated either by the maintenance of a drier atmosphere, or by cutting the fruit before they are quite ripe, these being placed on a warm shelf to ripen. If screened from fierce sunshine, and which is apt to bake the fruits, neither colour nor quality will be much affected by this early cutting. This season our plants are again heavily syringed as often as the Peach trees in the same house, and this appears to be a sure preventive of cracking. Syringing also greatly checks the spread of the very troublesome tiny white fly known as Aleyrodes, and red spider is similarly checked.

The Potato fungus, Peronospora infestans, sometimes attacks Tomato plants under glass, and should this be discerned a little fire heat ought to be given and a drier atmosphere maintained. It is also necessary to at once destroy the affected plants before the disease spreads through the house. There appears to be no remedy for the disease which attacks the points of the fruit, this also being a fungus growth, and as far as my experience goes all that can be done is to at once destroy the affected fruit. The disease already alluded to—viz., Cladisporium fulvum, is at present most prevalent in the Channel Islands, and unless a remedy is soon found it will probably lead to a discontinuance, for a time at any rate, of Tomato culture in districts where the bulk of the fruit imported to this country is now grown.

For exhibition purposes the preference is usually given to the rich red round-fruited varieties, these "taking" better than the ribbed or corrugated varieties or any of a pink shade of colour. Carter's Perfection is one of the best that can be grown, this attaining a good size, is very handsome, and of first-rate quality. Livingstone's Perfection much resembles it, as also does the heavy cropping Hackwood Park Prolific. Selected fruit from Trophy or Stamfordian are very fine in every respect. Mikado is very distinct and succeeds well in the open air, but the pale colour is objectionable. Turner's Hybrid, selected from it, is very superior, the colour of this being a very rich dark red. Either Acme or Dedham Favourite are suitable for collections of Tomatoes, as also are Large Red, Golden Queen, and Large Yellow.—EXHIBITOR.

PERENNIAL CORNFLOWERS.

AMONG hardy perennials destined to become popular plants these Cornflowers are notable, as they possess a vigorous constitution combined with free and continued flowering, and their flowers are highly valuable in a cut state. Few plants are of easier cultivation, and all succeed in fairly well enriched loamy soils; at the same time they well repay for liberal treatment, and plants should not be allowed to stand in one position for any longer period than two years. They can be divided and replanted after flowering, but March and April are in reality the best months for planting, except that there is the danger of sacrificing many flowers that may be expected in June. They can be transplanted after the June flowering by giving a little protection from hot sun and a thorough soaking of water occasionally, while in an exceptionally wet summer like the present it hardly feels the moving.

Not the least important feature in connection with these Cornflowers is their picturesque form, thus rendering them particularly distinct and effective when arranged with other flowers in vases. All the varieties are increased freely by division and also by root cuttings, the latter being best inserted when the plants are dormant. They also seed freely provided the flowers are allowed to stand; but it may be well to observe that the seedlings are often much varied, some of them deteriorating in a surprising degree; still good varieties do appear among the rest. At the present time in most of the varieties there is a decided lack of substance in the flowers, which may be regarded as their weak point. This is more noticeable in the type and flesh-coloured forms, while an increased number of florets would be a great improvement in the white. Much the best and fullest flowers come from the variety rubra, and these are of a pleasing rosy red, very attractive, and certainly a most valuable perennial. There is a tendency of the centre florets to fold inwards, cupped as it were, which produces good effect. The florets of all the other forms radiate horizontally. The varieties best known are the blue, white, flesh, and red. There is also a so-called sulphur variety; the name is however misleading, the colour being a dirty cream tint, very probably a seedling, as it is the counterpart of some I flowered a short time since. All the foregoing are supposed to be forms of the Mountain Cornflower, Centaurea montana, though none of them has the deep green glossy leaves which mark the type. This may also be distinguished by its narrower and more lance-shaped leaves. In all the other varieties mentioned the leaves are much more woolly and inclined to ovate acuminate, while all appear to vary somewhat in leafage, so much indeed that I have wondered whether they are really the offspring of one species.—J. H. E.

ROYAL HORTICULTURAL SOCIETY.

JULY 10TH.

SCIENTIFIC COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair; Messrs. Smee, Boulger, W. G. Smith, J. O'Brien, D. Morris, and Dr. Masters.

Insects Attacking Shoots of Ash.—Mr. Boulger mentioned, on the authority of Mr. Stainton, that the insect was probably one of the Tineidæ, Prays Curtisellus.

Plague of Caterpillars, &c.—A further discussion took place on this subject, in the course of which Mr. O'Brien alluded to the abundance of earwigs (Forficula) this season. Mr. Wilson drew attention to the local distribution of the caterpillars. In one garden in his neighbourhood none of the pests were found, while in others there was scarcely a leaf on the tree. At Wisley, Mr. Wilson had found that exposure to east wind was associated with the presence of insects; thus the trees in one line of Plums, fully exposed, were stripped of their foliage, while in another line of the same variety close by, on the same description of soil, but where the trees were sheltered by a Furze fence not a leaf was injured.

Fungi on Cucumbers and on Poppies.—Mr. W. G. Smith exhibited leaves of Cucumbers affected with Didymium dædaleum, and also Poppies attacked by the Peronospora arborescens, in consequence of which the flower stalks were lengthened and spirally twisted.

Lælia Eyermanni.—Mr. O'Brien made some remarks relating to this plant, which is remarkable for the presence of well-developed leafy bracts (not membranous sheaths), at the base of the flower stems. By some the plant is considered to be a hybrid between L. autumnalis and L. majalis. As there was some doubt expressed as to whether the existence of leafy bracts might not be accidental, it was suggested that the plant be exhibited again another year.

Odontoglossum Eugenes.—A plant of this was shown, and was considered to be a form of O. excellens, and possibly of hybrid origin, O. Pescatorei being one of the parents.

Anthurium Rothschildianum.—From Messrs. James Veitch & Sons came a plant with two spathes from the same stock. One of the two was much more densely spotted than the other.

Epidendrum vitellinum.—From Messrs. Sander came flowers of this species, in which, although the flowers were not fertilised, the ovary beneath the flower was enlarged, its colour glaucous-green, with six prominent orange-coloured ribs. Subsequent examination showed that the pollen-masses had not been removed, and that, although the ovary was swollen, the ovules in the interior were imperfectly developed.

Diœcious Strawberries.—Mr. Morris forwarded a letter from Mr. Colebrook on the subject of the well-known tendency towards the separation of the sexes in Strawberries, especially in the United States.

Tomato Disease.—A letter was read which had been written to Mr. W. Iggulden by a Guernsey grower detailing the course of this too well known, or rather these too well-known diseases. The writer's plants were in a span-roofed house, 60 by 25 feet, and were affected last year, when sulphur was applied without effect, the leaves were speedily affected but not the fruits. After the removal of the crop the grower took the precaution to have the walls washed with lime, to renew the soil, and adopted every known means to secure healthy growth, but this year the disease is worse than before. One grower was mentioned as having seven houses, each 350 by 45 feet, decimated with the disease and not a pound's worth of saleable fruit in before. Mr. W. G. Smith referred to the full description and illustration of the several fungi known to attack the Tomato, given in the *Gardeners' Chronicle* in 1881, November 12th, and in 1887, August 6th, October 1st and 29th, by Mr. C. Plowright and himself. Dr. Masters suggested the trial of sulphate of copper in fine powder, mixed with precipitated lime, and dusted over the foliage, as used in the French vineyards.

Monstrous Cypripediums.—Various specimens from Mr. Tautz and Mr. Pollett were shown, and referred to Dr. Masters for examination and report.

VACANT GROUND IN KITCHEN GARDENS.—Early crops are now being removed from their growing quarters in all gardens. These include Potatoes, Peas, Spinach, and Turnips, and this affords an excellent opportunity to plant winter crops. It is not yet too late to plant Savoys, Broccoli, Brussels Sprouts, and Greens generally. As our south borders are cleared of Potatoes the ground is at once filled with Veitch's Autumn Giant Cauliflower and Veitch's Self-protecting Broccoli, both of which merit a good position. We do not wait until a long border is cleared, but as every half-dozen rows or so are lifted the plants are placed in. Turnips and Spinach are also sown on some of the vacant ground, and it is only by attending strictly to this rule of planting that we can keep up a large supply of winter and spring vegetables. No one ought to feel satisfied with one crop a year out of the garden. Two at least should be secured, and three if possible. In planting very late Broccoli we always study to put them at the end of a quarter, as they will not

be ready until next May, and it is well to have them out of the way of other crops.—K. G.

REVIEW OF BOOK.

Choice British Ferns, their Variety and Culture. By CHARLES T. DRUERY, F.L.S. London : L. Upcott Gill, 170, Strand.

MR. DRUERY was well fitted for the production of a popular work on British Ferns, for he is widely known as an enthusiastic and skilled pteridologist ; this book therefore possesses special interest to cultivators of hardy Ferns. After a chatty introduction the collection and cultivation of British Ferns is considered in seven chapters ; then comes a division devoted to "the Fern Families of Britain," which are described in eighteen chapters, enumerating the most distinct varieties, the characters of the types being illustrated in numerous small figures. In the appendix the papers on Apospory, contributed by Mr. Druery and others to the Linnean Society's Journal, are republished, and the book abounds in scientific and practical observations of a very entertaining character.

Referring to the variation in British Ferns the author thus sums up their chief peculiarities :—

"*Cristation.*—This consists in a multiplication of some or all of the extremities of the fronds and their subdivisions, forming a more or less heavy tassel. This ranges from a simple forking of the tip of the frond only to an infinite division of all the parts, from the main stem upwards, and has been carried to such an extent in several species that, instead of a flat feather-like frond, we have apparently a ball of very fine moss all but resting on the soil. This cresting, which more commonly takes the tassel form aforesaid, is in its turn varied infinitely in its character, not merely by the multiplication of the divisions which form it, but also by the mode of such division. Thus it may divide symmetrically in the same plane, forming a wide or a narrow fan-shaped crest ; or these divisions may be again subdivided symmetrically, at greater or less distances, forming a flat lattice-work. Let, then, each division be more or less twisted, and every degree of curvature will give a different effect ; or the simple fan may be elongated, and tips fanned out again. Here we have, manifestly, already a great scope, yet this is doubled by the capacity of the divisions to radiate, like the blossom of a Geranium (corymbiferous), with all the like variation repeated. The crests may also be formed by undivided expansion of the tips, like a duck's foot, instead of a crow's, to give a familiar example. Then, again, all these combinations are connected with the other varying characteristics of the frond itself, which may have overlapping or distant sub-divisions (pinnæ, pinnules, or pinnulets, according as they form first, second, or third divisions), all of which affect the result so much that the eye can easily distinguish the differences which characterise many variations of the same normal form. This cresting, in one or other of its forms, is the characteristic of the major number of known varieties.

"*Plumation.*—This is by some considered, and with reason, the most beautiful type of variation. It consists either in a much more delicate division and growth of the ultimate sections of the frond or in a greater foliaceous development, the result being as great a difference between the common and plumose forms as that between a goose feather and an ostrich feather amongst the divided Ferns, such as the Lady Fern, the Male Fern, &c, and between a plain strap and an elaborate fringed frill in the case of the Harts-tongue type. In this class of variation the normal outline of the frond is maintained, or merely widened, except, of course, where it is combined with cristation, which is frequently the case.

"The plumose character is usually accompanied by partial or entire absence of spores, the reproductive vigour of the plant suffering, apparently, at the expense of its leafy development, precisely as in the case of double flowers, to which it probably furnishes a parallel. There seems, however, good ground for the belief that though spores are not formed, or very sparingly, the reproductive powers of the plant are enhanced in other ways, such as by the production of buds, latent or evident, on various parts of the fronds. From experiments we find that the barren Harts-tongue—*i.e.*, the crispum or frilled section, can be propagated much more freely from sections of the bases of the frond stalks than is the case with the fertile varieties. This would harmonise with Darwin's hypothesis of pangenesis, and suggests the advisability of a closer investigation of the so-called barren forms generally.

"*Dwarfing* and *Congestion* are self-descriptive terms. Some of the dwarfed forms are extremely pretty, and specially adapted for small collections where space is very limited. Most of the species have afforded examples of this, coupled with other types of variation.

"Congestion characterises many forms, and consists in a more or less crowded and overlapping state of all the divisions, and since it usually, though not always, involves shortening of the stalks as well, generally accompanies dwarfing, and hence is classed with it.

"*Depauperation* is a common form of variation, and is rarely regular enough in its effect to be beautiful. It is curious in its way, thoroughly healthy and vigorous plants constantly producing fronds on which the tips or some of the pinnæ are either altogether missing, irregular in length, or very ragged and imperfect, exactly as if devoured by insects. These oddities are, nevertheless, truly transmitted, in most cases, by the spores.

"*Variegation.*—This is very rare, and we believe there have been found no regular variegated forms, such as some of the exotic species have produced—*e.g.*, Pteris cretica albo-lineata and others. Some forms of the divided Ferns have been found irregularly splashed with white ; and yellow Harts-tongues are not rare in collections.

"The above form the main types of variation, and two or more of them may be, and frequently are, conjoined in one and the same plant, which, of course, immensely increases the scope. Besides these there are endless forms which can only be classed as oddities, such as the cornute and truncate forms, where the frond is cut short, as it were, the midrib projecting suddenly from the face or back of the frond, like a thorn ; or the frond ends abruptly in a pocket, or horn, or frill, or all these combined ; serpentine forms, where all the parts and the whole Fern itself are lengthened and twisted about like a serpent, striving, as it were, to become a climbing plant, like some of its foreign relations ; marginate forms, where lines or ridges run along the upper or lower surface, parallel with the edges or midrib ; revolute forms, where the frond is rolled up longitudinally like a tube, the divisions taking a half-circle curve backwards ; caudate forms, where the divisions end in a tail ; and so on *ad infinitum*.

"*Proliferation* characterises many varieties ; in this little plants appear on the stalks, edges, faces, or even the backs of the fronds. Many of the soft prickly Shield Ferns (Polystichum angulare) are thus affected, and look remarkably pretty when the young plants develope, as they do in profusion all along the centre of the frond, and sometimes of the pinnæ.

"The same form of variation, carried to excess, often so far obliterates the differences between the species that it requires an experienced eye to recognise them. Nothing, for instance, can be more dissimilar than the Lady Fern and the Harts-tongue, yet there are forms of both, dwarf and extremely crested, that are as like as two peas. The robust or giant forms of some of the smaller-growing species, and the dwarf forms of the larger, also contribute frequently to a likeness in the varieties which does not exist at all in the normal types. Fronds, for instance, of the common Polypody, fully 2 feet high, and beautifully cut, lose all likeness to the common, and resemble the Shield Fern varieties ; while the dwarf form of Male Fern (Lastrea pseudo-mas ramosissima), about 3 inches high, would be relegated by most people to any species but the right one.

"The affinity, too, between the plain strap-shaped Ferns and the much-divided ones is also curiously shown in several varieties of the Harts-tongue (projectum series), in which there is a manifest and regular tendency all along the frond to form pointed side divisions. The converse case is seen in some of the strap-shaped varieties of the Hard Fern, in which the double comb is also obliterated."

The subject is pleasantly treated, and in some cases a quaint humour renders the book very agreeable reading.

THE COLOGNE EXHIBITION.

IN reference to the International Horticultural Exhibition to be held at Cologne in commemoration of the twenty-fifth anniversary of the Flora Garden Company from the 4th of August to the 9th September, 1888, we have received the following communication from the British Consulate at Düsseldorf.

This important Exhibition, which is honoured by the patronage of the Dowager Empress-Queen Augusta, under the presidency of Prince Wilhelm of Wied as Honorary Chairman of a distinguished and able General Committee, will be opened on the 4th August next. Baron Ed. von Oppenheim, Imperial Austrian-Hungarian Consul at Cologne, Chairman of the General and Executive Committee, informs me that they are desirous that British products and manufactures, machinery and appliances connected, directly or indirectly, with the main object of the Exhibition, shall be largely and well represented.

I have the honour of drawing special attention to this Exhibition, which promises to be the most successful one of its class ever held in the Rhenish Province - the pearl of the German Empire. A better opportunity for promoting the export trade to the Continent in the branches of industry concerned could hardly be afforded—within so easy reach of British ports—elsewhere than at Cologne, one of the most central points of traffic in the most industrial and thickly populated provinces of Germany.

In the Rhenish Westphalian provinces great progress has been made of late years in the cultivation of gardens and parks on the English system, a taste which is daily being more and more developed with consequent increased requirements. In some branches of horticulture Holland and Belgium rank very high, but in most classes of industry connected therewith the English products and manufactures are superior ; however, in these days of world-wide competition, mere advertisement and issue of circulars no longer suffices. To ensure success the quality must be proved by exhibition wherever and whenever opportunity is afforded.

The programme in German, list of chief products and manufactures in English, including no less than 750 kinds of exhibits, is a very comprehensive and extended one, to which exhibitors are not strictly limited. All classes of products and manufactures in any way, even indirectly, connected with horticulture and model farming will with pleasure be received, and every facility will be given for cheap and expeditious transport, suitable mode of exhibition and representation, no charge being made for space. All applications for further information made to the Executive Committee, Gartenhau, Ausstellung, Cologne, will be promptly attended to.

It is desirable that such applications be made as soon as possible. The Committee has such a considerable amount of funds at disposal that prizes for exhibits not already specified in the printed programme can, I am informed by the Chairman, and doubtless will, be granted, the wish being to further develope, in every way possible, the science and art of horticulture in the widest sense of the word.

The exhibits admitted to competition for gold, silver, bronze medals and money prizes include hothouse, conservatory, garden, and field plants, as well as seeds of all classes, also the products thereof, and the manufactures therefrom, including wine, beer, porter, vegetable oils, sugar, resin, indiarubber, hemp, flax, jute, bast, and cotton, coffee, tea, and tobacco, fruit in natural and preserved state, and vegetables of all classes, garden architecture, plans of and designs for gardens and parks, models and exhibits of hothouses, conservatories, with apparatus for heating and shading the same; summer houses, permanent and portable; tents, garden furniture, verandahs, aquariums, aviaries, poultry, swan, and duck houses, all kinds of garden, park, and field iron and wooden fences, tiles, sculpture, vases, urns, and pedestals, material for construction of watertight ponds and cisterns, especially without the use of cement; flower baskets, appliances for the decorative illumination of gardens, parks, conservatories, &c., garden and park engines, machinery, implements, and mechanical appliances of all sorts, such as hydrants, hoses, pipes, fittings, irrigating appliances, water carts, syringes, &c., pumps, motors, and all apparatus connected therewith; mowing machines to be worked by hand, pony, or donkey power; horse, pony, and hand carts of all sorts; surveying, levelling, and drawing instruments, &c.

Flower pots and tubs for ornamental plants, labels, bouquet cases and holders, apparatus and appliances for drying fruit and vegetables, bouquets, wreaths, fans, &c., flower stands and table decorations, ornaments for dinner tables, drawing rooms, &c., sample of the best materials, wire, &c., for tying bouquets, hair dressing, and decoration.

Collections of herbs, wood and seeds, butterflies and insects, petrified plants and fossils; bee farming, working bees, hives, and appliances connected therewith, samples of honey and wax, literature on bees and bee-farming, literature on horticulture; in fact, as will be seen by the programme, all classes of exhibits are included which are directly or indirectly connected with the most improved cultivation of gardens, parks, and model farms, a branch of industry taken as a whole which is further advanced in the British isles than any country in the world. No charge will be made for space required for exhibition.

The foregoing is a list of some of the chief products and manufactures enumerated in the programme received from Baron Edward von Oppenheim, Chairman of the Executive Committee.—J. R. MULVANY, *H.B.M. Consul for Westphalia and the Rhenish Provinces, British Consulate, Düsseldorf-on-the-Rhine.*

P.S.—Since writing the foregoing, I see by a supplementary programme that 21,700 marks (£1088) have been subscribed for money prizes.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

A GRAND summer and Rose Show was held on July 11th and 12th under the auspices of the International Exhibition Committee, the funds being provided by the Executive of the "International." Two large marquees were erected in a sheltered spot in the beautiful grounds of Kelvin Grove Park, the half of which is this year enclosed as part of the Exhibition grounds, and is a most delightful retreat to sightseers when fatigue compels them to come outside. The arrangements were as usual carried out under the skilful superintendence of Mr. Franc Gibb Dougall, and proved very satisfactory, plants and flowers being admirably disposed in both tents, giving a most pleasing sense of varied beauty.

The large collection of plants shown by Mr. R. Bullen, Botanic Gardens, in the Rose tent, added greatly to the effect. The eye turned with relief from the mass of colour on the Rose table to the varied shades of green in the Botanic collection, and the popular names attached to the plants proved a source of great interest to the visitors who thronged the tents. Over a hundred varieties of officinal medicinal plants were shown, among them being some very large specimens. Special notice was taken of two large plants of Sugarcane, a magnificent specimen of the Tea plant, and many others too numerous to mention. Messrs. J. & R. Thyne, Great Western Nurseries, Kelvinside, had the only collection of plants in the nurserymen's class, the space filled being about 200 square feet. Although the stimulus of opposition was wanting the arrangement was done with the elegance and taste for which the firm is famous. Messrs. Jas. Bryson & Son, Helensburgh, exhibited a collection of Roses in pots, and a plant of Blackberry (Wilson, junior), in fruit. A magnificent plant of Stanhopea tigrina suspended from the roof in the tent attracted much attention. About fifteen fully expanded blooms formed a beautiful wreath, completely hiding the bottom of the basket in which it was grown; the colour was very dark and the spots few. An enormous model flower garden was shown by Mr. R. Millar, Netherhill Gardens, Paisley, containing a very pretty range of model plant houses. Mr. M. Campbell, nurseryman, High Blantyre, had a large collection of Pyrethrums, Pansies, Carnations, and Begonias, for which he was highly commended. A seedling Pansy named Lizzie Duncan received a first class certificate, an honour it also received at Edinburgh. Messrs. R. B. Laird & Sons, Edinburgh, showed a stand of Pyrethrums of excellent quality, all named sorts tastefully set up, many of the blooms rivalling in form quilled Asters. This collection was very highly commended. Mr. A. Lister, Garfield Nursery, Rothesay, exhibited a large collection of fancy Pansies; many of them were seedlings of good quality, a stand of twenty-four blooms being highly commended. Mr. Geo. Bainbridge, florist, Eglinton Street, had some choice bouquets and chaste floral wreaths, for which he was very highly commended.

Cut Flowers.—Roses.—In the class open to all for sixty blooms Roses, distinct varieties, Mr. Hugh Dickson, Belmont Nursery, Belfast, had first prize with very beautiful blooms, not so large as we have seen in more favourable seasons, but the quality was all that could be desired. Some of the more striking varieties in the stand were A. K. Williams, Benoit Comte, Earl Dufferin, Lord Bacon, Merveille de Lyon, Mabel Morrison, and a splendid bloom of Etienne Levet, which gained the first prize for the best bloom in the Exhibition. Messrs. Harkness, Bedale, Yorkshire, had second, and Messrs. A. Dickson & Sons, Newtonards, third. For forty-eight blooms Messrs. A. Dickson & Sons had the first prize, Mr. Hugh Dickson second, and Messrs. Harkness third. In the class for twenty-four blooms of Roses a local grower came well to the front, Mr. David Robertson, Mossend Nursery, Helenshurgh, taking the first prize; Mr. Wm. Montgomrie, Cardross, second; and Mr. Thos. Smith, Stranraer, third. In the class for Tea or Noisette Roses Mr. Robertson was again first with very fine blooms of Rubens, Niphetos, Madame de Watteville, Madame Falcot, and Grace Darling. Mr. Robertson was also first for twelve trusses of Moss Roses. For twelve blooms Maréchal Niel Roses, Mr. Tinsely, Lennox Castle Gardens, had an easy victory over Mr. Wm. Parlane, Row. Messrs. Harkness & Sons had the best six blooms of A. K. Williams.

Messrs. Perkins & Sons, Coventry, had first prize for the best basket of Roses and Ferns, best basket of assorted flowers, and the best bouquets of bridal and assorted flowers. The exhibits of Messrs. Perkins were a feature of the Show. We are accustomed to fine bouquets in Glasgow, but those from Coventry could not have been excelled. The baskets were works of art, calling forth the admiration of the lady visitors. In the class for thirty-six blooms, Roses, the local champion, Mr. Wm. Parlane, Helensburgh, easily held his own, gaining the first prize and the Veitch Memorial medal.

In the other tent fruit and cut flowers were arranged round the edge, plants filling a large table in the centre. A decorated dessert table, 10 feet by 5 feet, was put up by Mr. W. B. M'Neil, 6, Blantyre Street, and was much admired; the fruit and flower dishes and glass service being kindly lent for the occasion by Messrs. Ostler of London and Birmingham from their magnificent collection in the International Exhibition.

Plants.—The prize for six stove and greenhouse plants was awarded Mr. Thos. Hogg, gardener to Mr. J. Gordon Aitkenhead, Cathcart, the same exhibitor having also the prize for three stove and greenhouse plants. Mr. Geo. Meston, gardener, Mercia House, Pollokshields, had first prize for a table of plants arranged for effect, and the best Tree Fern. Mr. Mathieson, gardener to J. L. Henderson, Esq., Westbank, Partick, had first prizes in the classes for six foliage plants, three foliage plants, and one specimen Palm, Kentia Belmoreana. The Palms in this collection were exceptionally fine. The prizes for six exotic Ferns, six British Ferns, and six pans Lycopodiums were in each case gained by Mr. Caughie, gardener to ex-Provost Kennedy, Partick, and were all admirable examples of cultivation. Table plants made a splendid display, and have not been exceeded in quantity or quality in any previous exhibition in connection with this Society. Messrs. R. B. Laird & Sons, Edinburgh, won the prize in the open class, Mr. R. Grosart, Oswald Gardens, Edinburgh, carrying away the first in the gardeners' class. Mr. Grosart had also first for six trusses of Orchids, Cypripediums Veitchi and C. Stonei, very fine, and three Dracænas in 8-inch pots, D. Lindeni in very fine colour. For twelve trusses stove or greenhouse plants, Orchids excluded, Messrs. R. B. Laird was first with choice bunches of red and white Lapagerias, Dipladenias, Stephanotis, Allamandas, &c., very tastefully put up. In the Orchid classes Mr. David Wilson, gardener to Hugh Steven, Esq., Westmount, Kelvinside, had it all his own way, being first for three specimens and one single specimen, his specimens of Odontoglossums being large and very superior forms. Mr. Wm. Cowan, Clelland Gardens, Campbeltown, had the best Ericas; Mr. J. Robertson, Springbank Gardens, Stirling, had the best Crotons. Mr. Cullen, Balornack Gardens, had the only three Fuchsias shown; they were, however, magnificent specimens.

Amongst numerous fine stands of herbaceous cut flowers, Mr. Wm. Storrie, Garngahet, Lenzie, had the first prize for a really grand collection. Mr. John Sutherland, Victoria Nursery, Lenzie, had the best show Pansies. Mr. M. Campbell, Blantyre, the best fancies, while in the Viola class, Mr. Baxter of Daldowie Gardens, Broomhouse, had as usual the premier position in both the open and confined classes. His most telling varieties were Goldfinch, Rosy Morn, Lady Gertrude, Mr. Burns, Morning Star, York and Lancaster, Bullion, Delicata, Queen of Seots, Dawn of Day, and Columbine; the blooms were arranged in fan shape in Mr. Baxter's best style.

Fruit.—This was very good for this time of year. For collection of fruit, six dishes, Mr. J. Macindoe, Hutton Hall, Guisborough, was awarded the first prize. Mr. Macindoe was also first with six Nectarines, and the same honour for Cherries; he also secured the first place for a collection of vegetables of high quality. Mr. McHattie, Newbattle Abbey, Dalkeith, had all the honours for Grapes, securing first for four bunches Grapes, at least two varieties, two bunches white Grapes and two bunches black, all excellent examples, attracting a large

amount of attention. Mr. McHattie had also first for six Peaches with Rivers' Early York. He also secured the prize for a dish of Figs. A pretty case of Mushrooms from the Scottish Mushroom Company, Edinburgh, was very highly commended, and proved a source of much interest to the visitors.

Mr. Thos. Johnstone, Renfrew, had a large stand of his Orchid basket and plant tubs, very well finished; also specimens of his teak stakes for Orchids, and pitch pine stakes for Chrysanthemums, which are a great improvement on the German and quite as cheap, for which he was very highly commended.—KELVIN GROVE.

EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY.

THE twenty-fourth annual Exhibition was held in the grounds of the Royal Indian Asylum, kindly placed at the disposal of the Committee by Dr. Christie. The weather was unpropitious, the day being an ever-to-be-remembered one, Wednesday, July 11th, for the bitterly cold weather, with snow in many parts of the kingdom; still there was a great attendance of visitors, and the Exhibition from all points of view was an excellent one. We are unable to give a detailed report of the Show.

Roses were there in considerable numbers. For twelve Teas or Noisettes, Mr. G. Prince, Oxford, was first with blooms of large size and first-class quality; Messrs. Paul & Son second, and Mr. C. Turner third. For twenty-four trebles, first, Messrs. Paul & Son; second, Mr. C. Turner; third, Mr. Prince; fourth, Mr. Wm. Rumsey. Other classes also were well filled. Messrs. James Veitch & Sons and Messrs. C. Lee & Son each sent six boxes of fine blooms not for competition. F. G. Tautz, Esq., contributed a good group of Orchids, and Mr. Roberts, The Gardens, Gunnersbury, set up a very beautiful group of plants, consisting of Palms, Dracænas, Ixoras, Gloxinias, very fine Souvenir de la Malmaison Carnations, a very first-rate strain of crimson and yellow Celosia pyramidalis plumosa, a striking feature of the group, the whole fringed with Panicum variegatum. Mr. Roberts also staged, not for competition, a group of fine Gloxinias in pots, embedded in Maidenhair Ferns. Messrs. Fromow & Son set up a group of plants. Mr. C. Turner, a fine group of medium-sized Pelargoniums, two of which, both fancies—viz., Ambassadress and Mrs. Hawtrey, received certificates. Messrs. C. Lee and Son contributed a telling group of ornamental trees and shrubs in pots, most interesting, and we wish they were more cultivated than they are. This admirably arranged group contained so many rare and beautiful plants that a lengthened report would hardly do justice to them, but amongst the dark rich coloured foliage plants Prunus Pissardi and Acer Schwedleri stood out prominently. Impatiens Sultani from seed were examples of excellent cultivation, sent by Mr. Roberts; and Mr. A. Wright, The Gardens, Devonhurst, Chiswick, deserves praise for his four first prize well grown Fuchsias, as well as for his first prize pyramidal Selaginellas.

Some capital flowering stove and greenhouse plants were shown, and good groups of plants. There were six competitors for the larger groups, Mr. Hudson, Gunnersbury House Gardens, taking the first prize. There were seven competitors for the smaller groups. Mr. B. S. Williams of Holloway sent, not for competition, a charming and interesting group of novelties.

The table decoration tent was one of the features of the Exhibition, the classes well filled, and refined taste was so prevalent. Rarely have we seen so charming a display. The cottagers' tent was crowded with exhibits, and surprise was freely expressed that so much quality was to be found throughout. Eight hundred dishes and plates were used for single dishes and small collections. There were 405 entries in the cottagers' class, which included twenty-two entries for three dishes of vegetables, twenty-one entries for two dishes of Potatoes, twenty-two entries for three Lettuces, the first prize a silver watch, fifteen entries for six varieties of vegetables, seventeen entries for four varieties of vegetables, nineteen entries for autumn-sown Onions, twenty-three entries for two varieties of Potatoes, nineteen entries for dish of Peas, fifty pods, so it will be seen that the Judges had their work cut out. The cottagers deserve the highest praise, and the gentry and tradesmen of Ealing are most generous in providing extra prizes in these classes. The display of bouquets of wild flowers and garden flowers by school children was very astonishing, nearly 450 being exhibited, and we are inclined to think that Messrs. Sanderson and Ballantine, the Judges, never had a harder task.

SURPLUS VEGETABLES.—It may be thought that to have more Beans, Peas, and other vegetables than can be consumed is good. It is certainly better than a deficiency; but having a surplus is not without evils. We sometimes hear of a glut at one time and a scarcity at another, and there is nothing will bring a scarcity quicker than having a surplus, because when the produce gets too old it immediately causes the younger pods and heads to cease swelling, and they never come on for a satisfactory succession, whereas if they were gathered closely as they become ready the later produce would swell to the last. If we wanted a row of Peas to cease bearing we would not gather any pods from it, but to prolong it for some weeks we would gather every one from the first. It is more economy to gather surplus vegetables and give them away than to allow them to remain to spoil the plants and a succession.—J.



FRUIT FORCING.

MELONS.—If fruit of these be required very late a last sowing should now be made, but unless there be a light and well heated structure available the prospect of a crop will be indifferent. It is desirable to choose for this sowing varieties that will keep some time after being ripe, as Scarlet Premier in scarlet-flesh and Longleat Perfection of the white-flesh sections. Both are good setters and swell well late, or at any time for that matter, in the season.

There must not be any further delay in placing out the plants for affording ripe fruits in October, it being equally necessary that they have a light well heated structure. If the weather be bright and the temperature at night does not fall below 65° fire heat may be dispensed with, only it is necessary that the bottom heat, if derived from fermenting materials, be 90° at the commencement, as they will gradually lose heat, and if from hot-water pipes 80° to 85°, the temperature of the house by day 70° to 75°, advancing with sun heat to 85° or 90°.

In pits or frames the last plants are setting their fruit, and a good watering should be given if necessary before the flowers open. If watering is necessary during the time the fruits are setting it should be done carefully, as a dry atmosphere with rather free ventilation is essential to a good set. As soon as the fruits of the different crops are set and swelling earth the plants freely. Keep the growths well in hand after the fruit commences swelling, so as to admit light and air to the principal leaves, also stop all lateral growths to one joint. Syringe freely and afford copious supplies of water, except during the setting and ripening periods. If canker appear at the collar promptly apply quicklime, rubbing it well into the affected parts, and if there be any indications of the fruit cracking cut the stem halfway through a few joints below the fruit, reducing the supply of water at the roots and maintaining a dry well ventilated atmosphere.

PINES.—Houses as they become vacant should be thoroughly cleansed before being again occupied with plants. The first thing to be seen to is the bed. If bottom heat be afforded by hot-water pipes, the material forming the bed, whether of tan or leaves, should be removed at least once a year, or insects, particularly woodlice, increase rapidly. The old material also harbours other predatory vermin. Brush all wood with hot lime, the wood and iron work being thoroughly cleansed with soap and brush, keeping the soapy water as much as possible from the glass, which ought to be cleansed with water only. If needed the wood and ironwork should be painted. Beds that are chambered—*i.e.*, the hot-water pipes covered with slates or other material, are much in advance of those passing through beds of rubble. Those composed of the latter should be turned, and dirt or small parts removed, to allow the heat given off by the pipes to penetrate through the whole and diffuse a uniform temperature to the bed. New material will be required for the bed. Fresh tan should be provided, of which 3 feet depth is ample where pipes are placed beneath to maintain the requisite temperature when that of the fermenting material is declining, and about 1 foot or 18 inches more where there are no pipes. If it be wet turn it occasionally on fine sunny days.

Suckers that were started in June will soon fill their pots with roots, and must be shifted into larger pots before the roots become closely matted together. Queens require 9 and 10-inch pots, and those of stronger growth 11-inch pots. Supply water immediately after potting, and plunge the pots in a bed having a temperature of 90° to 95°. There is no greater mistake in growing Pines than crowding young plants, which causes them to become drawn and weakly. Attend to the bottom heat of beds that have recently been disturbed by the removal of plants, not allowing the heat to exceed 95° at the base of the pots without immediately raising them, as too much bottom heat will disastrously affect plants with fruit or those having the pots filled with roots. Examine the plants for watering about twice a week, and maintain a moist, genial, well ventilated atmosphere. The climatic influences are now so favourable that Pine plants grow luxuriantly, therefore discontinue any shading such as may have been employed for an hour or two at midday when the sun was powerful through the months of May, June, and early July, the plants after this, unless the weather be very scorching, having the benefit of every ray of light, admitting air plentifully when the temperature ranges from 85° to 95°, affording to fruiting plants a night temperature of 70° to 75°, and succession 65° to 70° at night. Reserve if possible suckers on the stools for starting at the commencement of September.

PEACHES AND NECTARINES.—*Early-forced Trees.*—After the fruit is gathered from the trees started in December and early January, whether they are of the very early or the second early varieties, the strength will be centred on the swelling of the buds and maturation of the wood. To effect this perfectly it is necessary that the foliage be kept healthy, syringing forcibly to expel red spider and other insects, if necessary applying an insecticide. The wood which has borne fruit, not being extension, should be cut away; indeed, remove all wood not required for fruiting next season or for furnishing the trees. There

must not be any lack of moisture at the roots, and weakly trees may be assisted with weak liquid manure. Ventilate to the fullest possible extent, and when the buds are sufficiently plump and the wood mature remove the roof lights. The chief thing to guard against in early-forced trees is premature ripening of the foliage. It is well to allow a moderate extension of the laterals, especially when the buds are prominent, so as to attract the sap from the buds and so keep them dormant, as any undue excitement will cause them to expand. Any trees not in a satisfactory condition should be marked for renovation of the border, whether it be lifting the roots of trees that do not set and stone the fruit satisfactorily, or those that from weakness need vigour by an addition of fresh soil, so as to cause an increase of roots in order to secure a better supply of aliment. This is best effected after the buds are plumped and the wood is mature, yet whilst the leaves are upon the trees, so as to facilitate the root-action, which promptly follows judicious and careful lifting, the trees not receiving any check if proper precautions are taken in shading from bright sun and damping as well as sprinkling the foliage until the trees have formed fresh roots.

PLANT HOUSES.

Gardenias.—Keep those intended for early autumn and winter flowering cooler, and the plants can be exposed to full sunshine and ventilation, so that their growth may be thoroughly matured. This must be done gradually, or instead of attaining the object in view failure will follow. For early flowers it is necessary to ripen the wood as early as possible, and then with an increase in the temperature the plants will soon form and swell their flower buds. Young plants rooted in August last will be strong and fully 15 inches in diameter. Allow the shoots to extend, admitting air daily to insure sturdy growth, and fully expose them to the sun. Soot water and other diluted stimulants may now be given once a week. A little artificial manure applied to the surface of the soil will be found beneficial. Plants rooted early in the year may have their shoots pinched once more; if not in 5 and 6-inch pots transfer them to those sizes at once. Insert cuttings of young shoots for next year's stock of plants.

Ixoras.—Young plants that have flowered may be pruned and started again into growth in brisk heat. They should be grown fully exposed to the sun, with the general stock raised from cuttings at different times. When the plants are in active growth admit a little air daily, and if they are arranged close to the glass they will make firm short-jointed wood that is certain to flower. Plants grown in a close moist shaded atmosphere seldom flower satisfactorily. Large plants that have flowered may be partially pruned and started again into growth. Any shoots that have not flowered may be inserted in 2-inch pots, and will root readily and quickly in the propagating frame. If grown on afterwards many of these will flower this season, but those that do not will be useful for early flowering another year in 4 and 5-inch pots. Watch for thrips, which quickly destroy the foliage of these plants. A thorough syringing with a weak solution of tobacco water is the best means of dealing with them. Do not allow these plants to suffer by an insufficient supply of water at their roots; at the same time be careful not to overwater them, for they will quickly present an unhealthy appearance if the soil becomes sour.

Crotons.—These should be rooted in quantity where highly coloured well furnished plants are in demand for various forms of decoration during the autumn and winter months. Large heads can be rooted without losing a single leaf if they are taken off where the wood is soft. Small cuttings never make such handsome plants as those rooted with well coloured, fully developed leaves at the base. Good heads may be rooted in 4 or 5-inch pots as well as in those of a smaller size. Place in the centre of the pots a little sand for the base of the cuttings to rest upon, then water liberally and plunge the pots in the propagating frame. Shade from the sun and keep the frame close until roots have been formed. Directly they are rooted gradually harden and expose them to the light. The plants from which the heads have been taken may be allowed to break again, and the shoots produced when they have developed a few leaves will be suitable for rooting in 2 and 3-inch pots.

Dracæna Goldiana.—Plants that have grown too tall for ordinary use may have their tops re-rooted. Be careful to take them off where the wood is soft, or it will be a long time before roots are formed. When the base of the stems is moderately soft they root quickly and readily without losing a leaf. The heads may be inserted in 4 or 5-inch pots, and after they have been watered plunge them in handlights where gentle bottom heat can be given. Draecænas graeilis and Lindeni may be treated in the same way. If the stems are kept they will yield cuttings from the axils of the leaves, which can be taken off and rooted any time when large enough.

FLOWER GARDEN.

Bulbous and Similar Plants.—Most of the spring-flowering bulbs are now matured, but it is unwise to lift them, either with the idea that they are more surely preserved out of the ground, or with the motive of dividing the clumps. Lifting, drying and keeping in sand or other somewhat dry material has a most weakening effect on the bulbs; whereas when Irises, Narcissi, Hyacinths, Snowdrops, Tulips, Anemones, Bulbocodiums, Crocuses, Fritillarias, Lachenalias, and Erythroniums are left in the ground they continue to improve. Just as they are coming through the ground is the best time to lift and carefully divide them should this be desirable, and being at once replanted without much injury to the young roots, they will flower the same season. Those moved when in a dormant state, this including wild Orchids, will flower the first season after, but not often in the next. Those bulbs lifted from the flower beds and laid in to ripen, may either be left in the ground till wanted again in the autumn, or they can have the dead foliage cleared off, and be then packed in boxes of sand or fine soil. Ranunculuses require this treatment.

Hardy Bedding Plants.—These must now be attended to, as they cannot well be too strong or well rooted when transplanted to the beds next autumn. North borders are of the greatest service in preparing a number of plants that delight in a cool position, notably Daisies, Primulas, Polyanthuses, Alyssum, and other useful plants. Plenty of leaf soil, old Mushroom-bed manure, decayed tan, or other somewhat similar material ought to be well stirred into the surface, plants moving well out of soil thus treated. All the plants named, as well as Ajuga reptans rubra, Arabises, Iberises, Hepaticas, Forget-me-nots, Saxifragas in variety, and Aubrietias, are readily divided, and should at once be deeply and firmly dibbled out in lines across the border, and watered in if need be. Violas and Pansies after they have pushed up fresh growth may also be freely divided and planted out in nursery beds. Gentians ought not to be divided unless extra strong, as they are somewhat impatient of rough treatment.

Seeds and Cuttings in Handlights.—Either handlights or frames are of good service for propagating purposes, especially in a showery season, or when seedlings cannot be preserved from slugs in the open. The north side of a wall or other somewhat cool yet not much darkened positions are the best places for setting these, bright sunshine being especially harmful to cuttings. If Wallflowers and Stocks have failed in the open, sow in these handlights or frames at once, and thinly, so as to admit of the seedlings being transplanted with a tiny ball of soil with the roots. It is rather late to sow Pansies, Sweet Williams, Campanulas, Carnations, Primulas, Polyanthuses, and Myosotises, but the seed soon germinates under glass, and small plants are often serviceable. Cuttings or pieces pulled off double Wallflowers, Myosotises, Euonymuses, Alyssums, Iberises, dibbled in thickly in handlights or frames, watered in and kept shaded during that part of the day when the sunshine reaches a north border, rarely fail to strike root quickly. About 3 inches depth of fine sandy compost is preferable to ordinary garden soil, both as regards favouring an early strike, and also because the young plants are more easily and safely moved out of it.

Violets.—Divisions of both double and single varieties ought now to be growing strongly, red spider being less troublesome than usual. They thrive best when the old stem is quite buried, and any exposed ought to have the soil drawn up to them.

THE BEE-KEEPER.

GENERAL MANAGEMENT.

It is generally understood that I prefer keeping my bees in such a state that feeding is never resorted to unless the seasons are, like the present one, untoward and non-honey yielding. But even in the present summer, when hail and snow fell on the 10th of July, and only nine days on which I could say that the bees gathered honey in little excess of their daily wants, I have only given each stock half a pound of sugar on an average. Although the weather is now more genial, it has rained almost constantly for three days, with but little signs of improving. When bees require food, except in the case of swarms, it should be given them continuously and rapidly until they have had enough; and the handiest of all feeders, and the ones from which the bees take up the sugar quickest, are the under ones, such as I have described in previous articles, or the old-fashioned fountain.

For districts where the honey season does not begin until the end of June, such as our own, nuclei of not more than 2 lbs. of bees make the best stocks and give most satisfaction. Old queens I never depend on, even at one year. For early districts where the honey season begins in April or May stronger stocks should be kept, and in some late cold places it is advisable to follow the same course, but it would be wise of the bee-keeper to make experiments on this line. In all cases never allow the bees to have combs to make the current year of their working; either feed in September or make up from others until the hive is full. Should that not be possible full-sized sheets of foundation must be employed.

THE BEST HIVE.

For all purposes this is undoubtedly the Lanarkshire tiering, but hitherto the much-abused hive. With but slight alterations I

have used this hive for about forty years, and it has given me the greatest satisfaction; until with one, and the only one, exception, through an accident, I never lost a bee on my way to the Heather, and I have to take them long distances.

Bee-keeping has not been always managed by persons having the necessary experience, and bee-keepers in their novitiate state have, in many cases, been sadly misled. A standard hive was produced and held up as perfection, and no hive was admissible as a prizewinner at the big shows unless it was in accordance with the minds and ideas of the B.B.K.A. But, now, instead of one-sized standard frame, two are admissible, and tiering is the order of the day. This change the contributors to the "Old Journal" ought to be proud of, as it is now proven that it was the only one that allowed large and tiering hives to be recommended in its pages.

It has been recently stated that "George Raynor was the first to use carbolic acid as a bee-quieter," yet the *Journal of Horticulture* in earlier numbers tells a different tale, to the effect that carbolic acid, as well as creosote, was used as a bee-quieter long before we heard of that gentleman. A few stray leaves that I came across in my bee house lately gave me some information on the point of which I speak that will be borne in mind.

The hive that I use and recommend is the same as I have been using for forty years, and what I introduced to Stewarton some thirty years ago, and very much the same hive is now being adopted by bee-keepers generally. One difference is what is termed the break-joint; this was discarded by me when I had my second hive, as there should be nothing about the junction of boxes to make separation difficult. We cannot prevent the bees building their combs down to the top bars of the under boxes even when a bottom rail is used in the frame. In this hive I use no bottom rail, as there is the lost space the rail occupies, and very often half an inch above it, together with that below it. When there is no bottom rail there is very little lost space, and if the combs are sometimes fastened to the top bar of the under box all the better for the bees and bee-master; and when a severance is wanted a wire drawn through between is all that is necessary, a thing impossible where a break-joint is. The thoroughness of the ventilation floor makes it ahead of all other hives, and if the bees do occasionally fasten their combs to the top bar, of the two evils I have chosen the least.

THE SITE.

This, as well as the arrangement of the hives in September, should be well chosen, and in the most sheltered spot. Standing in twos or threes with a wide space between each clump prevents the bees mistaking their own hive (Carniolian bees are less liable to enter a wrong hive than other known varieties), and admits the sometimes necessary change during the swarming and working season.

After my hives are properly arranged and all well found in stores to prevent feeding during winter or spring, an inspection is made to see that all is wind and water-tight; they are never interfered with nor altered in appearance, a watch only being kept in case of accidents, and the snow removed from the front immediately after it falls. Owing to the bad season most of my hives, except the supered ones, are in the same state as I put them in September.

My first work in the summer is to make preparations for the next year, and for the purpose of preventing after swarms and to keep stock hives in full strength. This is done by encouraging a pure hive to swarm early or to make an artificial one. In about ten days after I divide it into nuclei, sometimes twelve are put into nucleus boxes with four frames and placed between but in the rear of the hives likely to swarm, which in a few days after are overhauled and all the royal cells destroyed, and the queen from the nucleus is joined, which is, as a rule, fertilised and laying. The advantage gained by this manipulation in a good season is doubly manifest. Stock hives get stronger with the young queen than it could do with the older, and swarming does not take place so readily, and drone comb is not built in empty places as it would have been with an old queen regnant. As the season advances other young queens are raised, and these are kept sacred for the following year's work, which far surpasses the aged queens; still, zealously preserved by some with all the orthodox clipping of wings, but which is neither commendable nor necessary where young queens are kept. The system of keeping young queens only in stock and large hives has, like the tiering hive, been from time immemorial successfully and systematically carried out in Scotland.

DOUBLE CASED HIVES.

For a country where they have to be moved about these are very ill adapted, and give no advantage whatever to bees or to bee-keeper. The single-cased hives are in every respect the best. Where small supers are used, a case about a quarter of an inch larger than the hive slips over the supers and protects them from cold or damage from jarring. Supers, especially at the Heather, ought to be the best protected, and with such hives I often have two and three tiers of supers filled, while the body of the hive is not completely filled. In fact, this seems to be the wishes of the bee, to have some unfilled space at the bottom of their hive, and shows how contrary to the bee's nature it is to crowd the bees into little space, or to fancy eking will prevent swarming. The construction of our hive is so simple that preparing them for moving is but child's play, and safety to the bees and people is insured. No bee can escape, and from the shallowness of the combs none can collapse, even although the road is rough, while from thoroughness of ventilation no bee is injured, and that plague foul brood, brought on by the stifling system, is never encouraged or started. Other details will be given in future issues.—A Lanarkshire Bee-keeper.

BEES AND THE WEATHER.

It may be some consolation to northern bee-keepers to learn that bee-keepers in the "sunny south" have no better prospects of a honey harvest than they have in the north. From the 20th of May till the 4th of June we had bright fairly warm days, and the more forward stocks were working well in supers, two of my own having well filled forty-two 1 lb. sections each, but at the latter date had no sealed honey. Since then we have had rain on twenty-three days, amounting in all to 5·35 inches, and a most remarkable absence of sun. It is needless to say that the bees have stored no surplus, but breeding has gone on, and swarming could not be prevented, even in the few short blinks of sunshine we have had. On the night of the 10th we had a strong cold north-west wind with rain, the former continuing all the day; the sun struggled through the drifting clouds occasionally and tempted the bees out, and they have perished by thousands. The thermometer was down to 39° that morning, and to 44° on the morning of the 12th. The wind has moderated, the barometer is rising steadily, and we hope for a favourable change. Dutch Clover is more plentiful than I ever remember having seen it, and if we have sunshine now we may yet have our empty supers filled.—A Sussex Amateur.

TO CORRESPONDENTS

All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Gardener Leaving (*Reading*).—If the house you live in belongs to your employer and you pay no rent, it is regarded as part of your wages, and you can only remain in it after your term of servitude

expires by permission of the owner. No charge is made for answering questions in this column to regular subscribers.

Melons Failing (*Hall*).—Are you sure the soil is not dry next the slates over the hot-water pipes? We suspect it is, and possibly the atmosphere may be too damp. Dig down to the slates, and if the soil is dry there make it moist in the best way you can, and raise the night temperature 5°, rather more than less, and continue the application of lime when gumming appears. Perhaps the soil is not so firm as it should be.

Photograph of Rose (*C. P.*).—We thank you for sending the photograph, but no one knows better than yourself how inadequately it represents the plant and blooms. This is, as you suggest, no fault of the artist, but is due to the subject and position. A Rose on a wall is about as difficult to "take" well as a house of Grapes, and nothing like justice is done to one out of ten of either by a photographer, however competent he may be in his work.

"Adam's Needle" (*Amateur*).—The plant of which you send flowers under the above name is Yucca gloriosa, a native of America, but known in this country for nearly 300 years. It is by no means uncommon to see this Yucca in flower, though it does not flower quite so frequently as some other species. The plant is not likely to die if it is in good soil, though it may suffer a little if it has a very large head of flowers. In any case suckers are produced freely, that will enable you to perpetuate it. The term Aloe is often applied to Agave americana, but it is really a distinct genus.

Melons (*D. C.*).—We have never seen Melon leaves in a more filthy state than those before us. They are infested with the black and green aphides, and the leaf surface is taken possession of by a fungus, hence the incrustation. All such leaves should be cut off and burned, and if the whole of them are equally bad the plants should be destroyed, for they are beyond recovery. If there are a good number of fairly clean and healthy leaves, sponge them with one of the insecticides advertised in the Journal, but we suspect the plants are ruined. When the house is empty it must have a thorough cleansing in every part, or you will have the same trouble next year.

Learning Gardening (*C. C.*).—Gardening cannot be better learned by an earnest student and worker than by reading attentively the articles and answers to correspondents in this Journal, taking note of information that is given on various subjects, comparing it with the work in hand, and storing it for future use. Thompson's "Gardener's Assistant" is a standard work on gardening, but the price is about 35s., but an enormous amount of information is contained in the thousand pages of the "Cottage Gardener's Dictionary," price 8s. by post from this office. There are works on special subjects, but those named embrace nearly everything pertaining to gardening.

Mushroom Spawn (*J. T.*).—Your questions are unanswerable; indeed they are so peculiarly framed as to be scarcely intelligible. Every spawn brick is not equally permeated with mycelium throughout, and that fact alone does not permit a reply being given to your first question. A lump an inch square full of spawn suffices for insertion, and three of these for a brick, but every inch you cut or break up may not be full of spawn, hence useless. About 80° is a suitable temperature in the manure for the running of the spawn. We cannot tell you about the practice adopted by all the vendors, but all of repute sell good spawn, and probably much better than you can make unless you have seen the entire process in operation. The nearer the spawn is obtained from spores the stronger it is, and the finer the Mushrooms produced under suitable conditions.

Rose Growths (*Kittie*).—In the first place you must be sure the strong growths from the base of your dwarf plants are Rose growths. We have seen such growths encouraged more than once, and a luxuriant mass of the Manetti Rose established. Some of the base growths are so luxuriant that they do not bloom in the autumn, and those that are very sappy may be topped when as high as the older growths. Others of medium strength that give promise of producing flower buds may be left for giving late blooms. The character of the shoots can be fairly determined on close examination and comparison. The basal growths of moderate strength and well ripened usually give the finest blooms next year, and it is a good plan to cut out weak growths after flowering, for admitting light and air to the stronger; but these should be kept as uniform as possible by topping, not allowing one or two to rush far ahead of the others and deprive them of a fair share of support.

Wiring Garden Wall (*Wm. B.*).—The best wire for walls and espaliers is No. 13, L.W.S. galvanised. The wires should be fixed in every alternate course of bricks, or about 6½ to 7 inches apart. For guiding the wires on the walls galvanised malleable eyes should be used about 6 feet apart, and they should put in quincunx—*i.e.*, the first eye in the bottom row should be 3 feet from the end, then 6 feet, and the first eye in the second row should be 6 feet from the end. The eyes should not project more than three-quarters of an inch from the wall, between that and half an inch being a proper distance. Both eyes and winders are made to project the wires 1½ inch from the wall, which is a mistake, as the trees do not thrive well with a space between them and the wall more than is necessary for tying purposes, deriving little benefit from the shelter and warmth of the wall. All the materials should be galvanised.

Peach Tree Foliage Turning Yellow (*An Anxious Inquirer*).—The cause of the foliage turning yellow is no doubt want of water, and support of a nitrogenous nature. The border being well drained, bones and old mortar rubbish used freely, water would be required at least once a week after the trees were in good foliage, as their roots ought not on any account to be allowed to become dry, but water ought not to be given until there is need for it, yet before the soil becomes so dry as to affect the foliage. Enough should be given to well moisten the border down to the drainage. As no manure is used in the border—a very wise plan—nutriment should be supplied as mulchings of short manure—not in excessive quantity, especially of fresh short litter, with the droppings from the stables. It is better to give a little and often rather than a large quantity at once. A mulching 2 or 3 inches thick is quite sufficient, just covering the surface when the fruit begins swelling after setting, and from that time forward adding a few fresh knobs weekly, so as to have the mulch about 3 inches by the time the fruit is well advanced in stoning. A sprinkling of soot, followed by a good watering, would do much to improve the colour of the foliage, or liquid manure, not too strong, may be given if the trees are not vigorous, each time water is required.

Earwigs (*M. P.*).—The following, chiefly extracted from Köllar, will perhaps meet your wishes:—"The Earwig (Forficula auricularia).—This well known insect, considered, without cause, as very dangerous to mankind, must find a place among those chiefly injurious to fruit and flowers. Its size varies according to its age and sex. When fully grown it measures 8 or 10 lines, including the forceps-like appendage at the end of the abdomen; its breadth is 2 lines. The body is light brown free from hair; it has very short wing cases, under which the wings lie concealed, folded both longitudinally and transversely. Its usual habitats are under the bark of trees, in the hollow stems of trees, in rolled up leaves, and under stones. The female sits upon her eggs like a hen and broods her young. The only certain method of destroying earwigs is by catching them, which is best effected by hollow tubes laid here and there in orchard and flower beds. The common Reed is fit for this purpose, but the hollow stem of the Sunflower is even more so, as the insects are eager in the pursuit of the remains of the sweet pith. They are also easily caught between the folds of paper, or in pieces of cloth and linen laid on the ground. They creep into these traps in the morning after their nocturnal ramblies, and may easily be shaken out and killed at any time of the day. Some amateurs of Pinks and Carnations place the feet of their flower stands in vessels of water, which prevents the earwigs from creeping, but not from flying upon the plants, for the earwig has wings."

Cucumbers Dying (*R. T.*).—The roots you have sent afford no signs of the disease that is caused by nematoid worms or vibrios, and we do not think they have been so affected. As the plants have failed for many years we suspect some error in management, either in regard to soil, watering, atmospheric moisture, or ventilation. If the plants root freely in rough rich loam, and are adequately watered, also that top-dressings of rich composts are applied as often as roots protrude through the surface, Cucumbers usually grow vigorously if properly attended to in other respects. If the plants have not been well fed in the manner indicated, and have also been allowed to bear all the fruits that set on them from the outset, they have been prematurely exhausted. We have seen many collapse through overbearing them when young and not encouraging the production of fresh roots for appropriating the food supplied. As you say nothing about the stems gumming or eankering, we assume these evils do not exist, and as the roots are clean and the stem has a starved appearance, we attribute the failure to inadequate support. Liquid manure will not compensate for the absence of new roots, and these can only be encouraged by frequent top-dressings of rough soil and manure kept regularly moist. If you can send us further information we will readily consider the case again, but with the sample and data before us we can arrive at no other conclusion than that the plants succumbed through overcropping them when young and inadequate support.

Troublesome Insects (*Thomas O.*).—The specimens marked No. 1 are insects of the centipede family, the species being known as Geophilus subterraneus; at present they are immature, but in autumn, when they have become larger, they change their mode of life. We then often find them out of concealment, crawling on paths or amongst herbage, apparently with the object of preying upon other insects, and being occasionally luminous in the dusk they are sometimes called glow-worms. This, and similar species, are apt to be more troublesome in moist seasons. Gardenias are particularly liable, it seems, to the attacks of insidious foes such as centipedes and scale. Many centipedes may be caught and killed by setting traps for them of slices of Carrot, Potato, or Apple buried loosely in the soil. The application of soot or lime is also destructive to them, and in the case of delicate plants they may be watered with a clear solution of the latter. When these fail petroleum has been tried as an application to the roots of plants, about 1 oz. to gallon of water well agitated and mixed, but this requires care in using. No. 2 contains the larva or grub of a small weevil, the red-legged or Apricot weevil (Otiorhynchus tenebricosus), which comes out later than the larger and even more troublesome O. sulcatus. The perfect beetles infest the young shoots and leaves of various fruit trees during the spring, and their progeny lie at the roots of shrubs, such as the Currant, also visit Strawberries, and occasionally vegetables, as in your case. They are difficult to reach, and not easy to kill when in the larva state as sent. Diluted ammoniacal liquor and a solution of salt have been found serviceable, and recently a decoction of quassia chips in which some softsoap has been dissolved.

Peach and Fig Diseased (*Sixteen-years' Subscriber*).—The appearance of the fruit indicates too rich and open soil, with a deficiency of calcareous matter. The decay is resultant of disorganised tissue,

predisposed by impure sap. The only remedy, and it is infallible, is to lift the trees so affected as soon as the growth is complete and the buds and wood sufficiently matured, but whilst the leaves are upon the trees, and lay the roots in fresh material, or the old material to which an addition is made if the soil be light of clayey marl equal to about a fourth, using it in as small pieces as practicable, and in any case a sixth of old mortar rubbish passed through an inch sieve. The roots should be laid in the compost, which must be well incorporated, nearer the surface, and particular care should be taken to preserve those that originate from the base of the stem and are of a fibrous character. All the roots should, if possible, be within a foot of the surface, placing in layers with the soil pressed firmly about them, the topmost not being more than 3 inches deep. The border must be efficiently drained. A border 24 inches deep is ample, and if it be less by one-third the width the trees occupy the roots will be more under control, and better than in a large mass of soil. Done at the time indicated the trees will make fresh roots before or with the fall of the leaf, and these being preserved by a mulch of short rather fresh stable manure 3 inches thick, nutriment will be afforded of a character insuring a good set, and satisfactory swelling and stoning, which effected, judicious after treatment will bring the crop to perfection. The Figs are decayed at the nose or apex, which is usually a result of insufficient ventilation, the house being kept too close, moist, and cold To insure Figs ripening perfectly they require a circulation of dry warm air, moisture being kept from the fruit after it begins ripening. It is particularly desirable to prevent moisture being deposited on the fruit at night, as when that occurs and air is not given sufficiently early to dissipate it before the sun acts powerfully upon the house, the fruit is made to shrivel at the eye and soon decays, being accompanied by a fungus, as in the examples sent.

Mildew on Strawberries (*J. D.*).—We have examined the plants and find them seriously infested with mildew, and to this we attribute the non-swelling of the fruit. The roots of the plants that have been grown in pots are quite healthy. There is nothing wrong with them. Mildew is much more prevalent in some districts and seasons than others, and the conditions in your case have evidently been favourable to its increase. There is no doubt whatever that sharp currents of air passing through front ventilators directly to the plants render them liable to the attacks of the parasite. It is the same with Roses, and some cultivators on that account scarcely dare open the front ventilators early in the season in gardens where mildew is prevalent. Very cold water given to plants on warm and bright afternoons is also calculated to result in the attack of the pest, because both the cold water and cold currents give a temporary check to the sap movement, and stagnation in that respect is favourable to the germination of mildew spores. The plant from the open ground is exceedingly luxuriant, and the leaves do not appear to have been able to elaborate the sap, which would thus be in a more or less impure state, and on that account favourable for spore germination. Cold night winds and bright sunny days alternating would be likely to encourage the parasite for the reasons stated. We should try the clean runners, but increase chiefly those varieties that best resist the mildew. The under surface of the leaves are first and chiefly attacked, because the cuticle is thinner and more easily penetrated. It is to the reverse side of the foliage, therefore, that the soft-soap and sulphur mixture should be applied, and even if the work is a little tedious it is worth doing. The worst affected leaves cut off and burn. They can be of no benefit to the plants, and will mature myriads of spores. It does not follow that the attack will be so virulent another year. You will find some varieties succeed better in your soil than others, and these should be most extensively grown. We know a garden in which President is worthless, and the soil is very similar to that with which you have to deal. In another garden, where the soil is lighter and less rich, it is one of the most profitable varieties. Vicomtesse Hericart de Thury is one of the hardiest in foliage, and likely to answer your purpose. We know the garden very well, with its sharp slope and strong soil, and are not much surprised that mildew is so prevalent in it this year.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. H.*).—The Strawberry is Carolina Superba, which is hardier and usually a better bearer than British Queen.

Names of Plants.—We only undertake to name species of plants not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*O. W. D.*).—Specimens for naming require to be very carefully packed to ensure their reaching us in recognisable condition. Those sent were so dried and crushed that it was quite impossible to determine them. Packed in small tin boxes with a little damp moss they would travel safely. (*J. P.*).—Without flowers or leaves the plant cannot be recognised, but from your description and the material sent we should think it is Geranium pratense. (*J. J.*).—The weed known as "Fat Hen," of which you send leaves, is Chenopodium album ; the red-leaved plant is Atriplex hortensis, and the Orchid Aerides expansum. (*W. B.*).—Gloriosa superba. (*R. S. T.*).—1, Reseda lutea, the wild Mignonette ; 2, Chrysanthemum Leucanthemum, the Ox-eye Daisy.

COVENT GARDEN MARKET.—July 18th.

The present dull weather is considerably affecting supplies, our market presenting anything but its usual appearance at this season of the year. Prices remain unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	10 0	to 15 0
Nova Scotia and Canada barrel	0 0	0 0	Oranges, per 100	4 0	9 0
Cherries, ½ sieve	5 0	8 0	Peaches, dozen	6 0	12 0
Cobs, 100 lbs.	0 0	0 0	Pears, dozen	0 0	0 0
Grapes, per lb.	1 6	3 6	St. Michael Pines, each	3 0	5 0
			Strawberries, per lb.	0	1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 6	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	8 0	14 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	3 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzoners, bundle	1 6	0 0
Cucumbers, each	0 4	0 7	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 6	0 10
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bunches	2 0	to 4 0	Marguerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	2 0	4 0	Mignonette, 12 bunches	3 0	6 0
Asters, French, per bunch	2 0	3 0	Pansies, 12 bchs	1 0	3 0
Azalea, 12 sprays	0 0	0 0	Pelargoniums, 12 trusses	0 6	1 0
Bouvardias, bunch	0 6	1 0	,, scarlet, 12 trusses	0 4	0 6
Calceolaria, 12 bunches	4 0	6 0	Pinks, various, 12 bunches	2 0	6 0
Camellias, 12 blooms	0 0	0 0	Polyanthus, 12 bchs	0 0	0 0
Carnations, 12 blooms	1 0	3 0	Pyrethrum, doz. bunches	3 0	6 0
,, 12 bunches	4 0	6 0	Roses, Red, 12 blooms	1 6	2 0
Cornflower, 12 bunches	1 6	3 0	,, (outdoor), 12 bchs	2 0	6 0
Daisies, 12 bunches	2 0	4 0	,, (indoor), dozen	0 6	1 0
Delphinium, 12 bunches	2 0	4 0	,, Tea, dozen	1 0	2 0
Epiphyllum, 12 blooms	0 0	0 0	,, yellow	2 0	4 0
Eucharis, dozen	3 0	6 0	,, (Moss), 12 bunches	4 0	12 0
Gardenias, 12 blooms	1 6	4 0	Spiræa, bunch	0 6	1 0
Iris, 12 bunches	6 0	9 0	Stephanotis, 12 sprays	1 6	3 0
Lapageria, coloured, 12 blooms	1 0	1 6	Stocks, 12 bunches	1 6	4 0
Lilium candidum, French, per bunch	1 0	3 0	Sweet Peas, dozen	3 0	6 0
,, English 12 blooms	1 0	1 6	Sweet Sultan, 12 bunches	4 0	6 0
Lilium longiflorum, 12 blooms	2 0	4 0	Tropæolum, 12 bunches	1 0	2 0
			Tuberoses. 12 blooms	0 6	1 0
			White Gladiolus, 12 sprays	0 6	1 6
			White Lilac, per bunch	0 0	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Fuchsia, dozen pots	4 0	to 12 0
Arbor vitæ (golden) dozen	12 0	24 0	Genista, per dozen	0 0	0 0
Bedding out plants in variety, per dozen	1 0	2 0	Heliotrope, dozen pots	4 0	8 0
Calceolaria, per dozen	4 0	9 0	Ivy Geranium	3 0	6 0
Cineraria, dozen	0 0	0 0	Hydrangea, dozen	9 0	18 0
Coleus, dozen	3 0	6 0	Lilies Valley, dozen	0 0	0 0
Crassula, dozen	18 0	30 0	Lilium Harrisii, doz. pots	18 0	30 0
Deutzia, per dozen	0 0	0 0	Lobelia, per dozen	4 0	6 0
Dracæna terminalis, doz.	30 0	60 0	Marguerite Daisy, dozen	6 0	12 0
,, viridis, dozen	12 0	24 0	Mignonette, per dozen	4 0	8 0
Erica, various, dozen	9 0	18 0	Musk, dozen pots	2 0	4 0
,, ventricosa	18 0	24 0	Myrtles, dozen	6 0	12 0
Euonymus, in var., dozen	6 0	18 0	Nasturtiums, per dozen	3 0	6 0
Evergreens, in var., dozen	6 0	24 0	Palms, in var., each	2 6	21 0
Ferns, in variety, dozen	4 0	18 0	Pelargoniums, dozen	6 0	18 0
Ficus elastica, each	1 6	7 0	,, scarlet, doz.	3 0	6 0
Foliage Plants, var., each	2 0	10 0	Spirea japonica, doz.	6 0	12 0
			Stocks, per dozen	3 0	6 0



PURE SEED.

Threshing machines since they came into general use have caused much mixing of different sorts of corn, simply from the want of care in cleaning the drum between the using it for threshing different corn stacks. No doubt, too, there has been much carelessness about seed corn generally, yet it is equally obvious that the careful selection of seed is an important factor to success in farming. As a means to so desirable an end it is well, now that corn is sufficiently advanced in growth to show its true character, that a close inspection should be made, and all "rogues" got rid of. A sample of corn that is pure and of high quality invariably commands more attention from buyers than inferior mixed samples, no matter whether it is required for seed or food. Seed merchants charge fancy prices, and get them too, for pure seed ; and therefore it is clearly to a farmer's advantage to help himself as much as he can in this matter.

Close inspection of growing crops as they approach full development enables one to ascertain something about the relative value of different sorts. Such knowledge is not, however, to be regarded as conclusive, rather should it be joined subsequently to that sure and final test of weight and measure when the corn is threshed after harvest. Some of our most showy corn in the field does not pass the weight and measure test well. For example, Giant White Wheat is one of the most attractive sorts we have ever had, and there are few finer sights on a farm than a field of it under good cultivation in the present month. But after a thorough trial of it upon four of our farms we have discarded it altogether, for the bold showy crop is misleading, being deficient both in weight per bushel and quantity per acre—both serious faults for which quality alone will not atone.

Champion White Wheat from pure seed saved at our home farm bids fair to take the lead this year; we have it at all of our farms, and it is alike good on mixed soil and heavy land. What we really wish for is a White Wheat that is at least equal if not superior to any other Wheat in growth of straw; in quantity, weight, and quality of grain, and which is hardy, robust, and not liable to disease. It is always worth a little more per quarter than Red Wheat, and if that little only amounts to 10s. per acre it is quite worth trying for. Of Red Wheat, Defiance, Scholley's Square Head, and White Chaff Red are the sorts we have in cultivation this year. The first two are from very pure samples, and the results of the trial will enable us to decide whether it is worth while growing all of them again. On one farm we have an interesting study in a 30-acre piece of Wheat consisting of 10 acres each of Champion, Defiance and Square Head. On another farm we have upwards of 100 acres of the same sorts of Wheat, but the fields do not lie so well together for comparision.

Of Barley we used seed from excellent samples for this season, of which perhaps the best is a pure sample of Golden Melon from light land. We have also a good selection of Chevalier, and are trying to do still better by sowing a small field of Webb's Kinver Chevalier at the home farm for a supply of seed next season for the other farms. In all we have several hundred acres under Barley, and the importance of having the best only is obvious when we recall the fact of prices ranging last season from 20s. to 40s. per quarter.

The same principle equally affects all other crops, and its importance has a golden significance to the great seed firms. Not only do they find it answer to introduce new and improved sorts, but also pure selections of old ones. In nothing perhaps has greater improvement been effected in this manner than in forage crops. Permanent pasture is now gradually becoming as select and highly cultivated a crop as any other, but the cultivation of pasture is still only an idea, and not an accomplished fact with many farmers. Take a really well-cultivated pasture consisting of Foxtail, Cocksfoot, Timothy, Rye Grass, the Fescues, with a fair proportion of Clover and Yarrow, and the crop will be alike superior in nutriment and bulk to an old pasture of indigenous Grasses. For bulk of crop, Rye Grass and Cocksfoot, under a system of alternate husbandry, are perhaps superior to most other forage plants—certainly to all other Grasses—and their nutritive properties are shown by analysis to bear favourable comparison with other Grasses.

What we really want for the land is thoroughness in every detail of culture. We may procure pure seeds at a high price, but the money will be wasted if any other link in the chain of cultivation is missing. Drainage, mechanical division, deep cultivation, cleanliness, are alike indispensable to success, and not one of them must be wanting to insure it so far as it is in our power; for, alas! we cannot control the weather, which must be seasonably genial to put the crown and finish on our work.

WORK ON THE HOME FARM.

As we write farm work is almost at a standstill. We have thirty acres of meadow hay in cocks, and much Clover hay still out. Day after day has rain fallen, with the exception of the 8th and 10th and part of the 9th. Sunday, the 8th, was a bright hot day. The 9th opened fine, and we were able to clear several acres of meadow hay, and prepare many more for putting in cocks, but just as we had got the horse rakes in full swing and a few cocks made, down came the rain. On the 10th, by a free use of hand rakes, tedders, and horse rakes, we were successful in getting all the forward hay into cocks, and fortunate indeed were we to be able to do so, for much heavy rain has fallen since then, and it really appears that we are likely to have a repetition of the wet summer of 1879. Well, we made some good hay that year, and do not despair of doing so now. But haymaking in such unsettled weather is costly work, and happy men are they who are able to convert the crop into silage. We require large quantities of hay for sale, and so must do our best to obtain it.

No doubt the rain has done much good to light land crops, but all corn crops now require bright weather. The Wheat is in full bloom, and Barley is fast coming into bloom also; if now we can only have a favourable change to develope and ripen the grain, we still hope for a yield of a high average. Root crops are of course flourishing in such exceptionally favourable weather for them, and young layers of mixed seeds, Clovers, Sainfoin, and Lucerne are all thriving. Cattle Cabbage, and Kale too, should be exceptionally good, but the weather has been too cold for Maize to make really free growth.

With more settled weather every effort will be made to save the remainder of the hay, and other work is so forward that every man and horse can be used for this important work. Care must be taken to have all hayeocks well shaken out and the hay thoroughly turned and dried before being carted to the rick, for however dry it may feel, some moisture always ascends to it from contact with the soil in such heaps, and without subsequent exposure to sun and air there is much risk of mouldy hay in the rick.

We are requested to state that the only prize medal for appliances given at the Kennel Club Show, recently held at Barnes Elms, was awarded to Spratt's Patent, Limited.

Seed Stands at Nottingham.—The splendid and admirably furnished stands of Messrs. James Carter & Co., Messrs. Sutton & Sons, Messrs. E. Webb, Oakshott & Millard, and others we are informed constituted an important feature at the Royal Agricultural Society's Show recently held in Wollaton Park, Notts, but we have not space for detailing the exhibits in the midst of the Rose-showing season.

OUR LETTER BOX.

Scouring Calf (*G. R. S.*).—A calf so much reduced by scouring as to be almost a skeleton and unable to rise should be destroyed and an end put to its misery and suffering, for such a case is hopeless. From the extraordinary remedy suggested by your cow leech, we should hardly consider him qualified to attend to the diseases of animals. Generally speaking, scouring is caused by foul water; course, indigestible, unwholesome food; by long fasting and subsequent gorging, and by exposure to damp and cold. Our highest veterinary treatment consists in judicious feeding, nutritive food, restricted water supply, laudanum and ether or chlorodyne to abate spasm and pain; iron, acids, and bitters to promote the healthy tone of the weakened membrane, and comfortable protection from wind and weather. Such general advice falls clearly within our province. Specific remedies can hardly be stated without actual examination of an affected animal, and therefore we say, Do your best for other animals with food and shelter, and in every case of illness where simple remedies fail, at once call in a duly qualified veterinary surgeon.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

Date. 1888. July.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 8	30.088	57.5	49.8	E.	56.8	68.3	50.4	102.7	50.4	—
Monday..... 9	30.010	61.9	55.6	S.E.	55.5	67.2	49.6	117.8	44.8	0.026
Tuesday ... 10	29.944	57.8	52.2	W.	56.7	64.8	47.2	107.5	45.6	0.304
Wednesday.. 11	29.691	45.4	43.5	N.W.	56.3	55.7	42.8	1 1.1	43.5	0.038
Thursday.... 12	30.027	49.8	48.8	N.W.	55.2	58.1	45.4	100.8	44.1	0.021
Friday 13	30.137	58.1	54.0	N.W.	54.5	71.7	45.2	118.7	44.7	—
Saturday 14	30.036	65.1	60.3	N.W.	56.4	70.8	55.6	112.4	52.7	0.013
	29.990	56.5	52.0		56.1	65.2	48.0	1 8.7	46.0	0.401

REMARKS.

8th.—Fine, but without bright sunshine.
9th.—Bright and fine till noon, cloudy afternoon; slight shower in evening and night.
10th.—Fine, with occasional sunshine.
11th.—Strong wind and heavy rain in small hours; day generally overcast, with remarkably low temperature.
12th.—Damp showery morning, cloudy afternoon and evening; very cold.
13th.—Bright and fine; much warmer.
14th.—Oppressive, and frequently threatening; shower in evening.

A dull, damp cold week, the 11th and 12th being especially noteworthy for their very low temperature, that of the 11th I believe to be without precedent; not that the minima were exceptionally low, but the 9 A.M. and noon temperatures and the maxima, all the latter being frequently exceeded in January.—G. J. SYMONS.

THE HARDY FRUIT MOVEMENT.

TWO notifications have been made recently which indicate the existence of a desire that the fruit-producing resources of the kingdom should be developed, that obstacles to that end should be removed, and information on the whole subject elicited and disseminated. The first of these notifications is that relating to a conference of fruit growers to be held at the Crystal Palace in connection with the fruit show that is there held in September; the second the official announcement that an Apple and Pear Congress will be held under the auspices of the Royal Horticultural Society in October. There is room for both the projects being carried out, indeed it is questionable if either the one or the other of them could of itself do what is needed in discussing the whole subject of fruit culture in its commercial aspects and routine matters connected therewith, in a manner that would arouse public attention. It is quite time for something more than "showing" to be done, even at the Crystal Palace, if any substantial benefit is to accrue to others besides the winners of prizes; and it is still more incumbent on the part of horticultural societies to render their periodical gatherings instructive as well as attractive; and if one more than the other should lead the way in a departure from the system of showing, and showing alone, surely it should be the Royal Horticultural Society.

When the proposed conference of growers at the Crystal Palace was mooted, a number of persons interested in the subject of fruit culture at once gave their adherence to the project. It was felt, as if intuitively, that something of the kind was wanted, and that an opportunity for free discussion on a matter of great public importance had not hitherto been afforded in any systematic manner. The Committee appointed to make arrangements for carrying out the idea, and for formulating a method of procedure, will doubtless devise a programme that will open up a discussion of a distinctly beneficial tendency, and while no possible harm can be done by the reading of papers and an interchange of views thereon, it is conceivable that substantial good will result from the deliberations. It may be well, and is certainly desirable, in a reference to the projects indicated to banish all ideas of rivalry or opposition between them. Such ideas cannot be entertained by men who take a broad view of the subject, and judge it on its merits entirely apart from personal preferences and prejudices. The Crystal Palace gathering, that will be supported by Fellows of the Royal Horticultural Society, members of its Fruit Committee, and at least one of its Council, cannot pos-ibly weaken the movement of the Society, but it may materially strengthen it. The first named effort will act as a stimulant, and the experience gained will be available for use at the second, if based on the same lines, and if not, the world will gain by the two endeavours, while the former will bring the latter into greater prominence. A good deal may be done in September in arousing public interest on a great question, and then the Royal Horticultural Society may do a great deal more if the proceedings are conducted on a broad, popular, practical basis in October, and onwards as circumstances suggest.

Rightly or wrongly—and the fact is mentioned without suggesting a semblance of reproach—a feeling is growing that the resources of the still great Society are not being applied in the best interests of the country or of itself. The medals awarded for groups of plants may be merited so far as the collections are concerned, and if medals were as plentiful as Blackberries there would be some to spare to be differently applied, and possibly not to a less useful or legitimate purpose. But the number is limited, and the authorities might do worse than consider whether a few of the honours at disposal could not be advisedly diverted from the orthodox channels. The vast majority of them are given for groups of plants, not for new plants possessing striking features entitling them to the distinction, but to collections of old and new plants on sale, and for which the exhibitors gain in other ways. Probably if an investigation were made it would be found that ten medals are granted for plants to one for fruit or vegetables; or, in other words, the ornamental section of gardening is rewarded at the expense of the useful. The disproportion is, perhaps, even greater than suggested, in which case there is all the greater reason that the lost balance should be restored.

It may be urged that medals would be granted for fruit and vegetables if collections of them were exhibited worthy of such recognition. Possibly, but not certainly, otherwise a most interesting and instructive collection of Peas recently exhibited by Messrs. Veitch & Sons at Westminster would have had something more than a vote of thanks and cultural commendation, but consisting of Peas only, and not of border flowers or nicknacks, it was passed. That, however, is not the point. The established principle appears to be only to grant medals to something "exhibited," articles grown, or bought or borrowed for the occasion, and which can only be staged by a limited number of individuals, who win them yearly with duplicate collections, or practically so. Dishes of the finest fruits and vegetables are imposing, and give pleasure to persons interested who inspect them, while the produce is as creditable to the growers, and these deserve recognition equally with exhibitors of plants and cut flowers; yet in the case of fruit especially, as a good gardener remarked the other day, "Grand dishes may mislead, and have misled, because spectators have been fascinated by them, taken the names of the varieties, bought trees the habits and bearing capacity of which they knew nothing, occupied space with them for years profitlessly, the result being that the planters wished either they had not seen the tempting specimens, or that information of the nature suggested had been supplied for their guidance." It would seem that something more is needed than staging so many varieties, whether medals are awarded for them or not. The best fruit producible, combined with the best knowledge attainable, appear to be the desiderata; and if both cannot be had together it is conceivable that the knowledge without the fruit would be of greater service than the fruit without the knowledge. Might not, therefore, a great good be done and much wider interest created in the work of the Royal Horticultural Society if a reasonable number of medals were set apart for the best essays on prescribed subjects relating to fruit and profitable land culture; these to be published without delay, and before the interest in the work vanished, for the benefit of the community?

If the Royal Horticultural Society were to devise something of that kind, and offer rewards for knowledge founded on experience and observation, a new and wide field would be opened, and men of ability in distant parts of the country who cannot "stage" material produce in London, could, and doubtless would, impart information that, if disseminated, would be of greater service to the nation than bald records of medals awarded for groups of miscellaneous plants or what not, that few are interested in beyond the recipients, and which not one person in ten thousand can see.

The subject now more immediately in hand is fruit, and in view of the coming Congress, if, in addition to samples of Apples and Pears, also independently of them, medals were offered for essays on specified subjects, to be selected by the Fruit Committee for consideration and ratification of the Council of the Society, it is not unlikely that more solid information would be forthcoming than by any other means, and that would command greater atten-

tion, and meet with wider acceptance than the records of a show could possibly do, however extensive and varied it might be. The reading of the prize essays thus obtained, with the discussion on them, during the period of the Congress at Chiswick, would enormously enhance its importance, and the public would be quick to see that the Society was engaged far more appropriately and beneficially than in the hackneyed work of "showing," and the Crystal Palace Conference would act as an appetiser to what ought to be a still greater and more important event.

VEGETABLES FOR EXHIBITION.

SELECTIONS FOR SUMMER SHOWS.

That many good vegetable growers err greatly when selecting their dishes for competition I well know, having bought my learning in that respect years ago, and others are doing the same every season. In most schedules the prizes are offered for a collection of eight kinds of vegetables, distinct, or the number may be two less or more. When it is stated that distinct kinds are required this means that no two varieties of Potatoes, Onions, or any other species will be allowed, infringing this rule justifying the judges in disqualifying the collection. There should always be a limit to the number of dishes, but if the prizes are offered for a collection of not less than, say, six varieties of vegetables, a hundred dishes may be staged, these including as many varieties of each kind as the exhibitors choose to put up. In such unsatisfactory competitions those who have charge of a large garden literally swamp their less favoured rivals. I must plead guilty to having won prizes in this way, but I should have been much prouder of winning with a fixed number of dishes.

Any time during the summer, and more especially during August, when so many shows are held, there are usually plenty to select from ; but what I term a model selection would consist of Potatoes, Tomatoes, Cauliflowers, Globe Artichokes, Peas, Carrots, Onions, and Cucumbers. If four more are wanted add Kidney or Runner Beans, Vegetable Marrows, Turnips, and Broad Beans, and in reserve Celery, Cabbage, Beet, and Mushrooms. No one, however, should think of rigidly adhering to, say, the first six or eight dishes unless all were extra good. What is shown should be as nearly perfect as possible ; and if, for instance, Carrots are bad, leave them, and substitute either Turnips, Kidney Beans, Marrows, or any other kind that may be superior. The same remark holds good with all other kinds excepting Potatoes, these being generally considered indispensable. Cabbage ought to be the last to fall back upon, as it cannot be considered of much value in the summer, nor do I attach much value to extra early Celery, as unless it is very good it does not count for much in a limited collection.

Some schedules state the number of specimens to form each dish, and where this is the case the greatest care should be exercised. Trickery of all kinds ought to be avoided. Never, if it can possibly be avoided, include roots, or specimens of various sizes, nor two varieties in one dish. Those which invariably please the judges are of uniform age, size, and colour, and in most instances medium-sized examples are preferable to those either very large or rather small. From nine to twelve Potatoes are usually sufficient for one dish, and these should be of good size, clear skinned, shallow-eyed, and without a trace of disease in them. If they are to be sent or carried some distance a few surplus tubers must be packed, as during the bad seasons some of those apparently free from disease may have developed it in the journey. All should, directly they are lifted, be carefully sponged clean, taking care not to bruise the skins in any way, and directly they are dry cover them to prevent greening. If packed for a long journey, wrap each tuber separately in paper and pack closely in a box. Fine tubers of the old Snowflake type, such as Cosmopolitan, Sutton's Seedling, Cole's Favourite, and Woodstock Kidney, always look well among a collection of vegetables, but I would on no account include International Kidney.

Tomatoes give quite a finish to a basket or tray of vegetables, and count well when judging by points is resorted to. The Perfection type, or the round, smooth-fruited varieties "take" best, and all should be nearly of one size, not over-ripe, and good in colour. They cannot well be too large always provided they have no ugly centres. As Tomatoes travel badly, and are of much less value when bruised, each fruit ought either to be wrapped in a square of tissue paper, and then bedded in moss, or strips of cotton wool can be wound round each Tomato, and all be packed closely together. In any case pack them stalk end downwards, and let them rest on a springy bed of moss or cotton wool, the lid closing down tightly on more of the same material. They keep longest when cut before they are really ripe, and will colour in a warm room nearly as well as they do on the plants.

Cauliflowers, if really good, are also of great weight in a collection, but those old much-greened, and, perhaps, caterpillar-eaten specimens sometimes seen at shows, had far better been left at home, and another good kind substituted. Large specimens ought not to be shown unless the "heads" are quite solid and white, as those nearer the size of a 2-lb. Melon, if quite fresh, will surpass others larger but less even. They may be kept several days by having the leaves tied tightly over them, this being preferable to lifting and storing in a shed. Preserve as many leaves as possible until the show tent is reached, this preserving the hearts, and which are easily bruised and become discoloured even in a short journey. Good-sized quite fresh Cauliflowers will stand and look all the better for rather severe trimming when being staged, but in the case of small or rather stale samples a few of the small inner leaves should be preserved. As they are liable to green quickly it is advisable to cover Cauliflowers and other white vegetables with paper till clear-out time arrives.

Globe Artichokes if shown in good condition secure the maximum number of points. The green variety is the best, but we include good samples of the Purple Globe rather than have no Artichokes in a collection. Very young or very old heads are unsuitable, neither being of much value. What are wanted are large, fully open, yet quite fresh heads, or those with thick succulent scales. It is the latter that the judges should test with the thumb and forefinger, and if found hard and dry be discarded. Six or nine heads are none too many, and these ought to be cut with long stems, especially if the collection is arranged in a basket.

Peas if fresh and good are entitled to a place in quite small collections. The pods ought to be straight, rich green in colour, well filled, yet not too old. Mere windbags are of no use, as Peas ought always to be tested by opening if not actually tasted. Telegraph, Telephone, Stratagem, Duke of Albany, Evolution, Jubilee, and Prodigy are all fine exhibition varieties, none failing to fill well, and for the later shows Ne Plus Ultra is also good. Gather Peas while the dew is on them, and carefully lay them in shallow boxes. When roughly handled the bloom is rubbed off them, and they present a spotted fringed appearance. If they have to be taken a considerable distance, pack the pods closely, the layers being separated by tissue paper.

Carrots when of good colour and well selected much improve the appearance of a collection, and I never like to omit them. The Nantes, Veitch's Model, Champion, and other superior Horn varieties, if of full size, are the best for the summer shows, and later on fine samples of the New Intermediate are hard to surpass. It is of importance that the roots be all of one size, clear skinned, and richly coloured. Quite small fibres and much of the tops may be trimmed off with advantage, and the roots be carefully sponged clean, dried, and then wrapped separately in paper.

Onions are considered indispensable by some exhibitors of collections, but I do not admit this. If good they ought to be included, not otherwise. Any time up to September the autumn-sown Tripolis may be shown in collections in preference to those of the White Spanish type spring-sown. The white-skinned varieties, notably Early White Naples, Giant White, or White Elephant, are more attractive in appearance than the Roccas, the latter being reserved for the class for heavy Onions. All loose skins and the roots should be trimmed off and a sponging in clean water be given. Select those with rather flat tops and well-rounded bulbs, and stage them with the tops downwards. Spring-sown Onions ought to have small necks, be ripened as much as possible, the straw-coloured skin looking well. Trim off the loosest skins only and the roots, and sponge them clean. These should be staged with the tops uppermost, but seeing that the judges cannot resist handling even Onions, give the preference to well-rounded bulbs with neat necks.

Cucumbers are usually included in good collections of vegetables, and if young, very straight, even in size throughout, and with short necks, they count well. At one time a brace was considered ample for a dish, but nowadays, in some districts at any rate, large heaps are put up. At first sight large heaps of vegetables of any kind attract attention, but with experienced judges have but little weight unless the whole of the produce is of good quality. Always, therefore, stage enough to avoid meagreness, but never put up large heaps of mixed quality. Carter's Model, Tender and True, and a good selection of Telegraph are all good for competition, both in collections and single classes.

Kidney and Runner Beans are of about equal merit, but the latter, if at their best, are the most imposing in appearance and may be preferred. Neither can be too long and broad provided they are not too old. They ought to be perfectly straight, rich green in colour, and should snap readily when tried by the judges. The latter do not always take the topmost pods, and although it is advisable to finish off the heap with some of the best, the rest

should not be old and tough. Canadian Wonder and Negro Longpod are the finest Kidney Beans, and amongst the runners there are none to surpass Ne Plus Ultra, Carter's Jubilee, Girtford Giant, and the Czar.

Vegetable Marrows may safely, if required, be given a place in a collection of eight kinds, though not if all those already commented on are in the best condition. On no account should full-grown Marrows be shown, either in a collection or single dish. What is wanted are two or more fruits of the Long White, these being about 9 inches long, of one thickness throughout, very fresh-looking, and without a blemish on them. A brace that varies in age, size, or form ought not to stand any chance whatever against specimens that I have described. Young Marrows are easily bruised, and each ought therefore to be wrapped up separately in soft paper, even if only a short distance has to be traversed to reach the show ground.

Turnips during the summer months are seldom fit to be included in a limited collection, but if quickly grown clean roots of Snowball or Veitch's Red Globe are available they would count well. A perfect root would have only a one mouse-tail-like tap root, which ought not to be cut off, and any that need much trimming are of little value. They may be near the size of a cricket ball or rather less, should have the leaves shortened, the bulbs carefully washed clean, and each packed separately in paper, or they may soon disfigure each other.

Broad Beans cannot be classed very highly, and are seldom included in limited collections after July. The very finest is Carter's Leviathan, and a well selected number of straight, and not very old pods 12 inches long and upwards are not to be despised. The Seville Longpod also grows to a good length, and handsome dishes of it are frequently shown. Beet is scarcely telling enough in small collections, but ought to be included in unlimited collections. For the summer shows Carter's Crimson Ball, a superior form of the Egyptian or Turnip-rooted, is to be recommended, these being selected, cleansed, and staged exactly as advised in the case of Turnips. Celery, as before stated must be extra fine and well blanched, if included during July or August in a collection of eight kinds of vegetables. Wright's Grove White is sometimes seen in good condition at summer shows, and the Incomparable Dwarf White is also suitable for early work. Grove Red, Standard Bearer, and Sulham Prize are all shown well at different places towards the end of August. Celery must not be trimmed very hard, and ought to be washed quite clean. If Cabbages must be included in a collection, select medium sized conical heads in preference to very hard overgrown samples too often seen at shows. Veitch's Earliest of All is fine for exhibition, and the Heartwell Marrow is also good in every respect. Mushrooms must be very fresh and even in size, or they are no good at the summer shows, nor should Parsnips be shown unless in unlimited collections, or in single dishes. They ought to be very clean and straight. Lettuces are a very poor substitute for any of the preceding vegetables, but are often shown in single classes. Anybody's Superb Cos, or a good selection of Paris White Cos, is hard to beat, and Veitch's Perfect Gem is the best Cabbage Lettuce for the summer shows. Lettuces should be lifted, the Cos varieties being previously tied up, but not trimmed in any way, and have some moist moss bound about the roots. When cut for exhibition these soon flag badly. Never select any on the point of bolting, as these get worse after a short stay in a warm tent.—EXHIBITOR.

GARDENERS' ORPHAN FUND.

AT the conclusion of the first year of the above it is a source of gratification to me to review the success which has attended our efforts, and which is due to the hearty co-operation of all concerned. I take this opportunity of returning my personal thanks to all associated with me in this matter, and also to the many gentlemen who have undertaken the office of local secretaries, and worked so zealously in the cause. The dinner, as is now well known, was equally a success—thanks to the numerous kind contributions of fruit, plants, and flowers. The room and tables presented an appearance which called forth unqualified expressions of admiration from the most competent and impartial critics.

It now affords me no small degree of pleasure to be able to state that we are commencing the second year equally well, being empowered, as I am, to announce that Mr. Sherwood (Messrs Hurst and Sons) in token of the interest he takes in the movement, has generously offered to place an orphan upon the fund at his own expense in accordance with Rule 12, thus increasing the number of recipients from ten to eleven. The name and particulars of the annuitant will be announced in due course.

It would afford me, and I may add the Committee also, much pleasure if any other gentleman blessed with an abundance of this world's goods were to emulate this noble example. I can only say that there are plenty of deserving applicants to whom such a favour would be of the utmost service and benefit.—GEO. DEAL, *Chairman.*

PROPAGATION OF CONIFERS AND SHRUBS.

IT is not often that gardeners in private establishments undertake the increase of trees, shrubs, and Conifers, but the propagation of many kinds by means of cuttings is easy, as they can be readily rooted and quickly grown into neat little bushes. A cold frame is all the protection required in the way of glass, but it is better if two smaller ones can be appropriated instead of one of the same size as the two, for the reason that some sorts require a longer time to root than others. Those that need more time can have the protection of the extra frame, while if the plants are kept together at the time of insertion, the early rooted plants can be transferred to other positions some months before the latest varieties. The size of the frame must be regulated by the requirements of the cultivator.

A shallow frame answers the best, for the reason that when new growth commences it is not drawn up weakly through being so far from the glass. The bottom of the frame should be covered with coal ashes, thorough drainage being essential. Over this have a layer 2 inches thick of decomposed horse manure or half-decayed leaves, into which the roots penetrate, as the soil clings better to the roots when manure or leaf soil in a rough state is present. Over this lay the soil 3 inches thick, which should be composed of equal parts loam, peat, leaf soil, and sharp silver sand. Many of the plants which are to go into the soil are really peat-loving, therefore it is necessary that peat be used; while some of the kinds would do equally well without, still none object to this mixture. Make the soil quite firm, that it be not of a spongy nature, as much depends upon the firm manner in which the cuttings are inserted. If the soil be moist, as it should be when used, no difficulty will be experienced. Over the soil place half an inch thickness of coarse silver sand, as when the holes are made for the cuttings some of the sand is carried down to the bottom of the hole with the dibber. Water the soil with a fine-rose waterpot, when all will be ready for the cuttings. This preparation should be made before the cuttings are obtained, as no delay in inserting them must occur after they are severed from the parent plants.

According to my experience the best time to take the cuttings is during the early part of September, when the current season's growth will be partly ripened, sufficiently so to make callusing an easier matter than if the insertion of the cuttings be delayed until the following month. Where it is possible the cuttings should be pulled or slipped off, retaining a small portion of older wood, which is more suitable for forming roots than the parts only of the current year's growth. Particularly does this apply to Conifers. The length of the cuttings must be determined by the plant under consideration, as, for instance, Retinospora plumosa may be 2 inches long, and Thuiopsis will need to be at least 4 inches long to obtain the necessary cut at the base containing a small portion of firm wood. Select the cuttings in the manner described, cut square across below a joint, trimming off the lower branches or feather as far as is required for the cutting to go into the soil. Fix them firmly at the bottom of the hole with the dibber. Fill the holes again with sand and give a gentle watering to settle the soil about the cuttings. Unless the sun be very powerful after this time no more water will be required until the spring beyond a light sprinkling should the surface become dry, which will depend upon the state of the weather. For a time shade the cuttings during the hottest part of the day. Ventilation will not be required except a little now and then to evaporate moisture, which will otherwise cause the cuttings to suffer. During the winter protect the sides of the frame with manure or leaves to prevent the soil in the frame being frozen too hard, as this has the effect of loosening the soil about the cuttings when it thaws, and then roots are not so quickly formed. Double mats thrown over the frame in severe weather will be beneficial in this respect.

In the spring, when it is seen that new growth is being formed, air should be admitted freely to keep the plants stocky, as much depends on this for their future welfare in forming shapely bushes. A western aspect for the frame answers well, perhaps better than a southern position, for the reason that if some of the cuttings do not root so readily as others, the powerful sun sometimes experienced during April and May will dry them too much. As before stated, some kinds root more quickly than others, and are ready to be removed from the frame during the early part of the following June, and be planted either in their permanent quarters or be transferred to a nursery bed for a season. When removal from the frame takes place the advantage of a layer of manure or leaf soil will be seen in the manner the roots cling to it, rendering

the process much easier and safer to the plants. The position for the plants the first year may either be on an east or west border, or any open space may be selected, planting either in nursery beds or in rows 9 inches apart, adding to each a portion of leaf soil if the natural soil be of a heavy nature, otherwise the addition of leaf soil will not be necessary. Should the summer be hot a mulching of partly decayed leaves between the rows will be of great advantage in keeping the roots cool and moist. I purpose naming those kinds which root the most readily and need to be planted the first June after the cuttings were taken, as such sorts may go in at one time, thus simplifying the matter of planting and frame room later on. The others, which require more time to make roots, should remain in the cutting bed for a year, when they could safely be planted out the following April. During the summer and autumn take the lights off when it is seen that all that are going to thrive have formed roots, as some varieties after taking six months to callus require a still longer period after that to make roots freely. The advantage of using two frames instead of one is now obvious.

First list for early planting.—Retinospora plumosa, Cryptomeria elegans, Thuiopsis borealis, Thuia Lobbi, Cupressus erecta viridis, Golden Yews, Thuia occidentalis, Escallonias macrantha and a small flowered pale pink variety with small leaves flowering in July, Veronica Andersoni, Laurustinus, Fabiana imbricata, Garrya elliptica, Buddlea globosa, Cotoneaster Simmonsi, Kerria japonica, Lonicera reticulata aurea, Ampelopsis Veitchi, A. hederacea.

Those which require a longer time to form roots.—Wellingtonia gigantea, Cupressus macrocarpa, C. gracilis, C. Lawsoniana, Thuia Wareana, Retinospora plumosa aurea, Euonymus japonica aurea variegata, Loniccra fragrantissima, Ceanothus azureus, Jasminum nudiflorum, Pyracantha, and Myrtles.

Aucuba japonica is one of the most useful evergreen shrubs we have. It is best propagated in this manner. At the end of September take the cuttings, 4 inches long; moderately strong side shoots are best, retaining a small heel. Insert them firmly in sandy soil about eight or ten in a 7-inch pot. Water gently to settle the soil firm about the cuttings. Plunge the pots in ashes in a cold frame. Little air will be required in the winter during the time they are callusing. About the middle of March plunge the pots in a gentle bottom heat, where roots will quickly form, when the plants should be hardened and planted out the following early part of June along with the rest, where they should stay the first year, and will then be ready for their permanent quarters.

The best of Laurels are the Caucasian, rotundifolius, common, colchicus, and the Portugal Laurel. The second named is the best for banks where a dense low growth is required or for forming hedges, being short-jointed and of a free habit of growth. If manure be added to the soil at planting time the colour of the leaves is much improved, as in poor soils they have a tendency to remain pale green, which deteriorates somewhat from its appearance, in the winter especially. Behind a north wall is the best position to root Laurels. Early in October the cuttings about 6 inches long should be slipped off, preferring medium sized shoots to large sappy growths. Chop out a trench with a spade about 3 inches deep, placing a layer of sand at the bottom, the cuttings being inserted about 4 inches apart. Fill in the soil, treading it firmly about the cuttings, digging the ground as the work proceeds, when the next row should be 10 inches from the first. The chief point is to thoroughly secure the cuttings in the soil, as if they are left loose roots cannot form. Previous to sharp frosts being expected it is wise to mulch between the rows with partly decayed leaves, as this prevents the ground becoming frozen hard, which when a thaw sets in renders the cuttings quite loose in the ground. After frost tread the soil about the cuttings firmly. For one season let the plants remain in their present position, when they may be transplanted, allowing more space to each. Irish Ivy, the best of all the Ivies for general use, may be propagated precisely in the same manner as Laurels, with the single exception that the cuttings may be cut into lengths of 8 inches, selecting the current year's growth and without the heel as advised for the Laurels.—S.

SOME CONSPICUOUS CATERPILLARS OF 1888.

As, from various causes, the present summer has been somewhat scant of Court and political news, the advent of a "plague of caterpillars" has been quite a godsend to sundry periodicals of the day, enabling them to anticipate the "big Gooseberry" season. According to the usual course of things some nonsense has been written on the subject by journalists deeply ignorant of entomology, and with no great knowledge of horticulture. We have not yet had reports sufficiently full and exact from the different counties to enable us to ascertain all the facts, but it would appear that rumour has exaggerated the mischief done as yet. Some of the caterpillars referred to are evidently species that are usually common, but in the general way their proceedings are not remarked upon by the Press. Other species have, no doubt, been exceptionally abundant, perhaps more in south Britain than in the north. One circumstance is notable, that our entomological magazines during the winter published statements concerning the scarcity of Lepidoptera—*i.e.*, of butterflies and moths, in 1887, presumably through the dry season. As the hosts of caterpillars observed in many places this spring and summer must have had parents we must assume that moths at least must have been more plentiful (if unnoticed) than was thought; and we also infer that the cold of last winter and spring was not, on the whole, prejudicial to such Lepidoptera as pass through those seasons in the egg state or as hybernating larvæ; the latter are often destroyed by a continuance of rain. Another fact is to be borne in mind, that the considerable amount of rain which has fallen in many English counties during June and July (in some cases during May also) must have helped to reduce materially the number of caterpillars.

The caterpillars now to be mentioned have been nearly all under my own observation in districts of Kent and Surrey within about thirty miles of the metropolis; other places may probably have suffered more from these insects, and some less. To begin with, a woodland moth, the little green species called Tortrix viridana, has been particularly abundant in woods, copses, and shrubberies. Wherever Oak was to be found it has been infested by the caterpillar, a small creature, but able to do much damage; like the moth it is bright green. Occasionally we find it driven by shortness of food to eat Hazel or Hornbeam, but its preference is for Oak. Showers of the moths flit amongst the boughs in June and July, succeeding to the caterpillar brood of May. These moths, it is noticeable, are hunted and eaten by several small birds, and they fall a prey also to a fierce ichneumon fly of the genus Empes, to which they can make no resistance. Every year we scarcely ever fail to see, in variable numbers, the small ermine moth (Yponomeuta padella) disfiguring our Hawthorn hedges. Occasionally, as in 1888, the species makes an attack upon fruit trees. It would appear that it is this insect which, in its larval stage, has been chiefly the cause of the damage sustained by the Apple in our Kentish orchards, the too sociable black-spotted caterpillars spreading their webs over twigs and branches, whence they came forth in their companies of hundreds and thousands, and in many cases the trees were nearly denuded before any steps were taken to clear webs and caterpillars. It is not at all difficult to shake off the caterpillars and destroy them, specially when they are young. Afterwards the best thing to be done is to remove, and then burn, all the webs, in which the cocoons are generally hidden.

Perhaps of the caterpillars that are common this season the public have seen most of the species oddly known as the lackey, or Bombyx neustria. It is a frequent thing for them to descend from trees and shrubs upon by-passers, and many are to be seen racing along paths, for they are easily dislodged from their resting places as they get larger; while young they hold on firmly, because they run united by lines of silk along the boughs where they are feeding. The caterpillars have fed this summer upon an extensive variety of trees and plants, sometimes abounding in orchards. They are easily recognisable by the two black spots on the grey head, which look like eyes, but are not eyes, though these organs exist as in other caterpillars; the body is striped with white, blue, orange, and black. Each mother insect places her eggs in a compact ring round some twig, where they are left to hatch in spring, but they should be sought out and removed. Another caterpillar which has been specially numerous is that of the mottled umber (Hybernia defoliaria), appearing in orchards, gardens, and the open country. This is a beautiful caterpillar of the geometer or looper kind, not naturally gregarious, though they often seem to be feeding in companies, as they seek out the young and juicy leaves, travelling over many shrubs and trees, but being partial to those of the Rosaceous or Prunaceous orders. Each travels about provided with a coil of silk, by which it can drop a long or short distance and again ascend to its food. It is a caterpillar of conspicuous colouring, and it may possibly escape bird foes by this contrivance. The moth is one of those that emerge during the dull or stormy weeks at the end of autumn. The females are wingless; hence, as after pupation they emerge from the earth, it has been advised to smear some sticky composition round the stems or trunks, over which the insects cannot crawl to deposit eggs. This plan has been very successful in checking the increase of the winter moth (Cheimatobia brumata), the whitish green caterpillar of which is so mischievous to Plums, Pears, to our mixed hedges in some years, and to other fruit trees occasionally, each individual hiding in a web. This species, however, has not, so far as I know, been particularly complained of in 1888, having been eclipsed by the little ermine already noticed.

The caterpillars of the gold-tail moth (Liparis auriflua) are stated to have been very common in some southern counties, but about Kent and Surrey there has been a rather less number than usual. It is an insect seldom seen in gardens, preferring vegetation along the lanes and borders of woods. Some of the journals which have referred to the "caterpillar plague" have stated that the insects have sometimes caused a peculiar eruption, or "caterpillar rash," in the human skin. This is known to occur in the case of certain hairy caterpillars, as with the above "gold-tail," and its near relative, the "brown-tail," where they are plentiful. This latter (L. chrysorrhæa) according to reports which bear the stamp of authenticity, was, many years ago, a serious enemy to our fruit crops. Of late it has been comparatively scarce, and occurs only upon the Sloe and Whitethorn. It would be a noteworthy fact should its caterpillar have appeared this season on any fruit trees, and I should be glad to receive, through the Editor of this Journal, any account of its being detected. I may state that the caterpillar is black, striped with vermilion, and has along the back tufts of white bristly hairs; upon the fifth segment from the head there is a double hump.

The hairs of the caterpillar of the great tiger moth (Arctia caja) have an irritating effect upon some persons, young and old, possibly all the "tigers" may. It is a species which sometimes finds its way into our gardens, eating Mint, Lettuce, and other vegetables, and is a hearty feeder. Its numbers this season are probably above the average. A moth that has been abundant in June and July is that named the silver Y (Plusia gamma), flying about day and night, and therefore we may expect the caterpillars will be out in force later on during August and September. Their food is so varied that they do us little harm, but in France they prove very destructive to pot-herbs.—Entomologist.

NOTES ON STRAWBERRIES.

LAYERING.

There are various methods of obtaining an early stock of well-rooted runners, all of which answer if properly carried out. One of the simplest is to take a number of the strongest before they have been trampled on and lost the first-formed roots. These being dibbled in a bed of fine light soil and covered with shallow frames soon become well rooted, and can be transplanted to their final quarters early. If only a few dozens are wanted they may be dibbled into boxes and placed in frames, or a few handlights may be filled with them. When the runners are transplanted, either from frames, boxes, or even from between the rows of old Strawberry plants, they invariably take more quickly to their fresh quarters than do root-bound plants turned out of small pots. In showery weather the runners soon strike root into ridges of fine soil placed midway between the old rows, or they may be pegged to squares of turf. Perhaps the majority of the plants are layered into small pots at the same time as others are prepared for shifting into the larger pots in which they are to fruit. If taken early, the best only being selected, and either pegged down or fastened with pebbles to the firmly packed soil in the pots, and kept well supplied with water, they soon fill the pots with roots. The final planting should be done as early in August as possible.

PREPARING GROUND.

Strawberry plants are seldom profitable after producing four crops, and in some instances they last in good bearing order an even shorter time. The first crop is the earliest, the fruit also being fine; the second is usually the most valuable; the third, perhaps, the heaviest, the fruit, however, not being of great size, while the older plants produce abundance of fruit for preserving. The oldest bed, therefore, should be destroyed every year, and a new one planted, and in this manner and by varying the sites a good supply of fruit is annually produced, if not always ripened satisfactorily. It is a crop that usually pays for trenching the ground, but it must be remembered that a loose, rich, and deep root run encourages the formation of much foliage, and to secure the required abundance of fruit the ground must be made very firm. The best plan is to well manure and trench the ground during the winter, cropping it in due course with Ashleaf or other early maturing Potatoes. This allows good time for the ground to settle, and the Potatoes being cleared off early, all that is further necessary, to clear, level, and trample the surface prior to putting out the plants. If the trenching, or rather double digging—as it is unwise in most instances to bring the subsoil to the surface—has to be done now, after the rough manure has been forked into the bottom spit, this should be heavily trampled, the top spit also given a dressing of more decayed manure, being similarly treated. Any ground now waiting for Strawberries should have all rough lumps broken down before hot or dry weather bakes them, and the surface being thus kept fine and moist, the planting may be done in the driest weather.—W. I.

PEA GRADUS.

The new early Pea Gradus was raised from Telephone × Wm. Hurst, and the produce of intercrossing these two Peas, as might be anticipated from the position they have secured, has been particularly fertile in producing good progeny, both tall, intermediate, and dwarf varieties, and amongst a numerous offspring Gradus is pre-eminent for its earliness, large pod, and productiveness as a variety of intermediate height. Gradus was sown at Girtford this year on the 11th April in an open position and ripened the second week in July with a good stock of

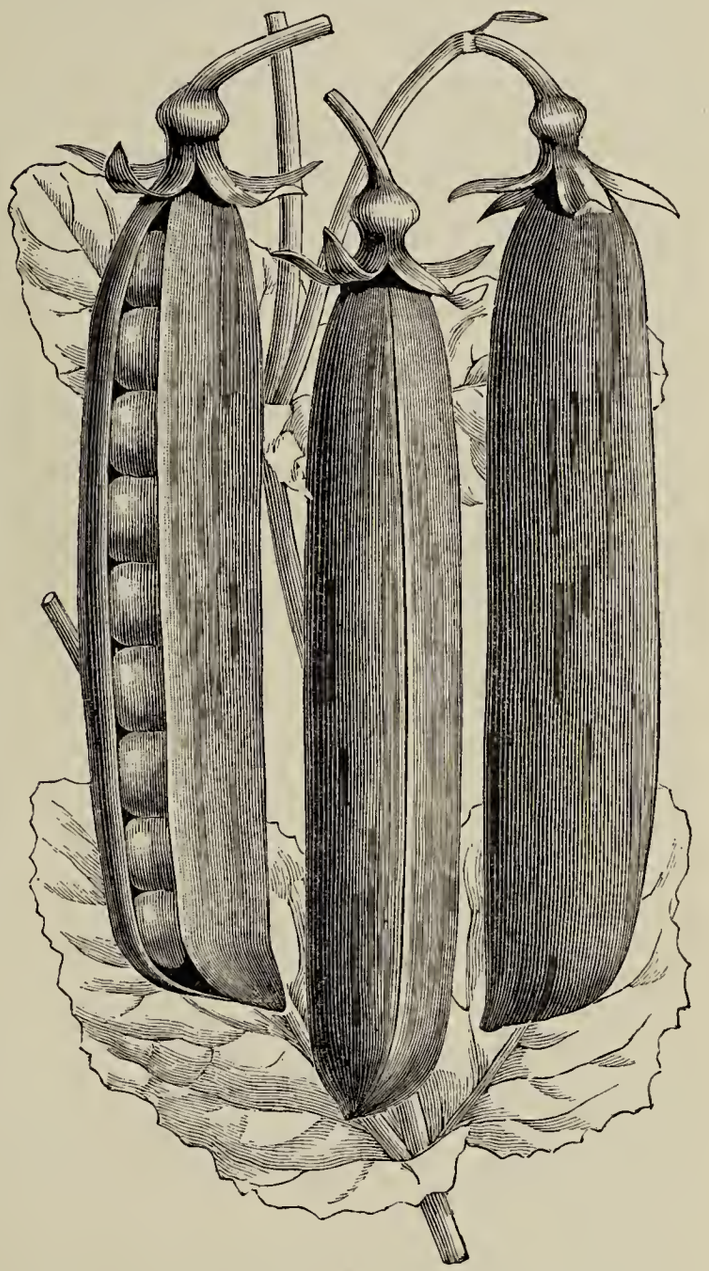


Fig. 7.—Pea Gradus.

William I. sown in a sheltered position on the 23rd January. The pod being large and well filled, and being a bluish-white wrinkled variety, Gradus must be an important advance in many respects. The height of the new variety does not much exceed that of Earliest of All. I believe the stock of Gradus to be fixed as well as it is possible to fix a Pea raised from cross-fertilisation, the variety having been carefully selected for several seasons.—T. Laxton.

FONTHILL ABBEY, TISBURY.

The manor of Fonthill (so called probably from the abundance of springs that gush from the sides of its hills) is situate in the hundred of Dunworth, about sixteen miles west of Salisbury and two from Tisbury Station on the South-Western main line of railway from London to Exeter. In "Domesday Book" it is described as part of the

possessions of Bereger Giff, in whose family it continued until the time of King John. Frequent vicissitudes (as recorded in "Michael's Important Spots in Wiltshire") attended Fonthill during the interval from the Norman Conquest to 1800, and at the end of the year 1825 the magnificent structure known as Fonthill Abbey became a ruin. A square tower and adjoining hall, together with a large square of green sward having raised banks sloping inwards, are now all that remains to mark the site of this fair creation. The Fonthill estate was soon after disposed of by auction to the late Marquis of Westminster, by whom, with the assistance of Mr. Burn, the present commodious and picturesque Elizabethan mansion was erected. It is now the Wiltshire residence of Sir Michael Shaw Stewart, Bart., and, owing to the high position on which it stands, commands a fine and varied prospect of Wilts and Dorset scenery, and is approached by three fine lodges (Tisbury, West Gate, and Stone Gate), and broad and well-kept carriage drives, which, winding o'er hill and dale, disclose not a few pleasant peeps of home and distant scenery, including the undulating Pine woods of Wardour Castle with the lofty steeple of Salisbury Cathedral in the background.

Approaching the abbey from the Tisbury entrance many fine specimens of choice trees and shrubs are passed. Of the former the most notable are the Silver Fir. Many of these 3 feet from the ground are 12 feet in circumference, 100 feet high, and as straight as a gun barrel. One, having a trunk 15 feet round, is a most remarkable specimen from the fact of its having eight stems of uniform growth, and about 100 feet emanating from it in the shape of an eight-pronged fork at 8 feet from the ground. There are also several specimens of Wellingtonia gigantea, about 50 feet high, and clothed from base to summit with luxuriant foliage. Choice Rhododendrons, Kalmias, Berberis Darwini, &c., are well represented on the sloping banks and in clumps at the north front of the abbey.

The flower garden, which is immediately opposite the south front of the abbey and contiguous to the ornamental grounds, is sunk and enclosed by terraces and ornamental balustrading, on which a variety of statues representing various deities are interspersed. It is geometrically laid out, and the beds being well filled with a variety of foliage and flowering plants judiciously arranged as regards colour, had, when viewed in connection with the surrounding landscape, a very pleasing and telling effect. Proceeding a short distance westward from the abbey we suddenly come upon the American garden, which for beauty of situation and formation of surface, luxuriant trees and shrubs, is probably unmatched in England.

In the deep winding valley is a succession of irregularly formed miniature lakes, having small islands surrounded by massive pieces of rock and covered by choice trees, shrubs, and trailing plants situate on different levels; the lower lakes being fed by the upper ones, thus forming a series of cascades, which, "foaming down the shaggy rocks," are very effective. There is a profusion of Water Lilies, and snow-white swans which float majestically on the dark waters of the several lakes, which at their narrowest points are spanned by rustric bridges draped with Honeysuckles. Fine specimens of Portugal Laurels, Azaleas, Rhododendrons, Kalmias, and other species, in variety, of American plants, together with groups and specimens of Deciduous Cypress (Taxodium distichum) and kindred species, clothe the adjoining slopes from base to summit. To the right of the point at which we entered this romantic and beautiful retreat huge stone steps lead up a steep ridge through grottoes, wilds of Fern, and under the shade of huge Rhododendrons and gigantic Firs to the site of the old abbey referred to above, the walls of which are draped with Pyracantha. In front, on the beautiful turf, are two circular stone vases 7 feet across, and one basket-shaped one 15 feet long, and which were at the time of my visit filled with a variety of flowering plants, including some of trailing habit, which, hanging gracefully over the edge of the vases, gave finish to the arrangement. From this coign of vantage is seen a fine green glade westward, nearly a mile in length, and which had formed the chief entrance to the abbey. We may here remark that the keep of the extensive woods, the well-made broad carriage drives - drives which to our mind invariably invest the destination of the visitor with a sense of liberality and importance—reflect great credit on Mr. West, the able forester on the Fonthill Abbey estate.

The kitchen garden is enclosed and divided in two portions by high brick walls. It is situate on the face of the hill about a quarter of a mile east of the abbey, and having a south aspect. The soil being a stiff loam resting on a bed of clay is not only congenial to the growth of vegetables, of which there is a good supply, but also to that of fruit trees, especially during a season like the one through which we have just passed, as testified by the fine examples of Pear and Plum trees which embellish the walls, and the fine pyramidally trained specimens of the former on each side the central walk. These trees, together with the sundry improvements which had been carried out in the gardens and grounds during the interval from the year 1865 to 1881, also testify to the skill and ability of the late gardener, Mr. Annandale.

The glass houses, the most notable of which is a curvilinear-roofed Peach house, 100 feet long, 8 feet wide, and 13 feet high at the back. The condition of the Peach trees Royal George, Noblesse, Violette Hâtive, and Impératrice Nectarine, which occupy the back wall, and from which the crop had been gathered, augured well for next season. At the north side of, and communicating with the kitchen, are located a span-roofed house, pits, and frames, and good shedding accommodation. Provision in the way of an enclosed space is also made here for the erection of a good block of houses and pits. The front of the Peach house indicated is a capital place for the growth of Tomatoes from the time the fruit have set in March or April until late autumn. The plants should be trained under the roof to a trellis fixed thereto, at about 9 inches from the glass to the height of 5 feet, and at intervals of 10 or 15 feet, so as not to exclude too much light from the trees on the walls. In this position the shoots and leaves should be kept well stopped and thinned to prevent crowding of either shoots or leaves from taking place, as this would spoil the chance of securing satisfactory results. And with this object in view the plants should be kept liberally supplied with weak liquid manure at the roots while swelling their crops. The condition of the gardens generally do Mr. John Macey, the head gardener, much credit.—W. H. W.



ROSES IN WINTER.

THE three questions submitted for my opinion on page 30 scarcely present themselves as the composition of a "learner" whose inability to fill in my "sketch" is the apology for their introduction. The first question would in all probability have formed the subject of my next paper. The carefully worded letter on page 30 is too guarded to be the outcome of a "learner," and touches in the first question the most perplexing and most difficult matter that the grower of Roses for winter has to contend with. Success in no small degree depends upon the manner the plants are rested, and the period they can enjoy complete repose before an attempt is made to start them into growth.

The second question embodies a doubt while soliciting information. The nature of the soil for potting as well as the border, if the Roses are planted out, would perhaps have been better dealt with at the beginning, but I did not intend to leave them for the "learner" to "fill in" unless the Editor hinted I had better draw the subject to a close. The third question has been practically answered, and would not have been further reviewed because much can be said on both sides of the question. But I will touch upon it again, as I am desired to do, as well as the other two, and in the order in which they are named.

The first question then is, "How Tea Roses are to be kept at 'rest' during September and October when planted out in a house with the roof lights removed? for the rain would fall on them and mild growing weather affect them as if quite in the open, where Tea Roses grow and flower freely then." The context to the question at first sight presents a difficulty. There is, I admit, and as I have previously stated, a great difficulty in keeping Tea Roses from growing during late summer and early autumn, but much depends upon the method of culture during the earlier part of the season—say, from May onwards. If kept under glass the whole season will they not persist in growing as freely during August, September, and perhaps October as they would, if fully exposed to natural conditions—that is, the lights removed and the plants subjected to the weather, even supposing it to be mild and showery? They will, unless extremely unnatural measures are practised to prevent it. When confined under glass how can growth be prevented, except by severely drying the soil about their roots? No half measures will accomplish this end; the soil must be kept so dry that growth is impossible, and this unnatural method of culture is decidedly injurious. I am no advocate for forcing rest upon the plants by methods that should be obsolete. Such practices impair the constitution of the plants, and enfeeble them to such a degree that they are fit subjects for an attack of any disease. What is the result, but puny growth, small flowers, and short life, instead of good health to enable the plants to resist disease and long life?

Rest in autumn is influenced in no small degree by the time the plants flower at first and their after treatment. Suppose the plants commence flowering in February, they will continue doing so more or less until May, being only a slight break, if any, with a good stock of well established plants. I am now writing of such varieties as Niphetos, which, as far as growth is concerned, may be taken as the type of many others. The first flowers will be from the ripened wood of the previous season, while the succeeding ones, which are often the best, come from the base and back breaks, and thus keep up the supply. The plants would, if allowed to do so, flower again profusely during July, and again in September and October. Supposing they commenced flowering in January they would flower for the last time a month earlier. But if the flowers are removed as they appear from the time indoor Roses are practically valueless, time is gained, and growth should be completed fully a month earlier. But "S. S." may say, What advantage is gained if the plants will persist in growing? Why this, if they are well cared for and assisted to make and complete a good growth, the wood necessary to be retained will be hard and well ripened, and the soft twiggy growth at the extremity of the shoots (unripe ends) can be cut away. Under glass rest must be forced upon them by the extreme measures I have pointed out, or they cannot be brought to a complete standstill until they have been subjected to frost. It takes more frost to bring about this condition when they are protected by glass than when they are exposed. Plants that may be flowered during the

months "S. S." has indicated, and then hardened and turned outside will rest for a time, and then commence breaking into growth in September. From plants subjected to this treatment we have been in the habit of obtaining our supply of flowers up to Christmas, but they are practically unfit for early forcing. If the plants are encouraged to make and complete a good growth after they cease flowering in May, before the lights are removed, they will, although they may grow slowly, be thoroughly maturing their wood in a natural manner, and ready to rest by the time the first frost appears. We are just as liable to have early frosts to bring about this end as we are to have moist, mild, genial weather. Whatever the weather may be in the day the nights at that season are often cold, and these, even without frost, have a wonderful effect upon plants that are only struggling to grow.

No comparison can be drawn between Roses that are started into growth to commence flowering in January and those in beds and borders outside that do not commence flowering for five or six months later. These flower, and are then often retarded by drought. Heavy rains in August, or about that time of the year, have a natural tendency to start them again vigorously into growth. The one is ready to rest when favourable circumstances occur, and the other is often rested too soon; and if the weather proves severe we are only too familiar with the consequences at pruning time in spring. Once the plants are brought to "rest" there is no difficulty in keeping them in that condition as long as may be desired. Exposing the plants to frost is the surest method of inducing rest and securing strong breaks afterwards. Lift Rhubarb after the leaves have faded, and expose it to one good frost, and it can be forced as freely as if it has been resting for two months; and the same applies to Roses that have been assisted to make their growth early under glass. The latter after they commence growth are influenced much by the weather. Turn a number of Roses outside after growth has been completed of Gloire de Dijon, Maréchal Niel, or any kind, and subject them to frost, while a like number in the same condition of growth at the time are kept under glass, and see which will force best and readiest early in the season.

The second question is, "What is the composition, nature, texture, and composition of the soil or compost to be used for such large pots and such young plants?" This plainly embodies a doubt that the pots I have recommended to be used are too large for such young plants. "S. S." would consider a 10 or 12-inch pot too large for the young Vine placed into it out of a 6-inch pot in May. The pot certainly looks large for the small weak plant, probably only 18 inches high and half the thickness of the pencil with which I am writing, but, is it too large at the end of the season, when by good culture it has developed into a strong cane? But I need not wander from the Rose for examples. Is not Maréchal Niel, Gloire de Dijon, and others that are worked or rooted early in the year, and attain a length of from 15 to 25 feet or more, plants large enough to be a credit to the grower without condemning or casting a doubt upon the practice that has produced them, even though they have been placed in June or July into 10-inch pots? I have grown Gloire de Dijon the first length indicated and much branched; Maréchal Niel with shoots over 25 feet from cuttings rooted in February, potted, and finally placed in 10-inch pots in July. If such success can be achieved with strong growers such as these, corresponding results can be attained with Niphetos and the smaller growing varieties. But Niphetos is not the poor weak grower that it is often thought to be if repotted from the time it is first worked and grown on without a check with liberal root room. It is a small puny grower when checked in its early stages by being too limited at its roots. Early worked plants, if well cared for, should be strong, 18 inches high with three or four shoots early in May, and well established in 5-inch pots. If placed into 7-inch pots without checking them, what shift will they require in July? The largest 10-inch pots and the smallest 9-inch. The pots look large for the plants at first I admit, the same as they do for Vines, Gloire de Dijon, or Maréchal Niel, but what opinion would be passed upon them at the end of the growing season. Compare this, then, with what I have written, and I think "S. S." will have still graver doubts about the pots, and perhaps the size of the plants as well.

Having dealt so far with the size of the pots, I may turn my attention to the soil I consider suitable. I prefer two-thirds fibry loam, intermediate between light and heavy, and one-third leaf mould, passed through a half-inch sieve. To this add one-seventh of decayed manure and sufficient coarse sand to render the whole porous. A 6-inch potful of soot, and the same quantity of quarter-inch bones with the fine left in may also with advantage be added. If the loam is of a light nature I should dry some clay and reduce it to powder, and add about one-seventh, and dispense with the sand. If heavy a greater per-centage of sand or any gritty material would be used, charcoal being useful for the purpose, charred soil, bricks broken fine, or even old lime rubbish to lighten and keep it open. These should be used in quantity according to the texture of the loam. Even with loam of an intermediate nature a little of the latter will do no harm. The manure may also be varied according to the texture of the loam. If light I should use cow manure if I could get it, and horse droppings merely sweetened and passed through a half-inch sieve if heavy. In future pottings—that is, during the second and third year, or as long as the plants are kept in pots and subject to repotting annually, I advise a little richer and less light compost to be used. The quantity of leaf soil would be less, as well as the sand, while the manure would be slightly increased. The pots should be carefully and liberally drained and the soil pressed into them moderately firm. The soil would be pressed firmer in the pots at any repotting needed after the first year.

I have previously commented to some extent on the border and its preparation; I have alluded to the drainage, whether the border should be above the ground level or the reverse, and also whether the natural soil should be removed and replaced with fresh. If the natural soil was good and the subsoil of such a nature to insure thorough drainage I should not remove it, or at least only a portion, so that the beds would not be too full by the addition of the ingredients added to it. If the natural soil would grow H.P.'s well it would be a waste of labour to remove it. All that is needed is to lighten it by the addition of the materials I have advised for that purpose when the plants are grown in pots. If too light clay in the manner I have described would be added. Under any circumstances I do not advise the use of leaf mould for the border that may have to stand for some years for fear it might be the means of filling the soil with fungus. Tea Roses enjoy a little leaf mould, and grow with luxuriance when it has been added to the soil, but in spite of this I should not run the risk of failure by adding it to the border.

The third question is, "Whether, in growing Roses for cut flowers for market in January, February, and March it would be most profitable to plant out inside beds near the glass or to grow them in pots, taking into account all the labour in the latter method?" This contains the substance of what would make a long article if I had to give all that can be urged for the one system or the other in deciding this matter. When Roses are forced in pots even for the supply of flowers during the three first months of the year, they cannot be turned out, but must have the protection of glass for nearly three months longer. Even supposing they could be turned out of the house in which they were forced, the protection of glass would have to be accorded them for some considerable time, and this amounts to the same thing in the end. If we suppose they could be turned out at the end of March I do not think such a course would be advisable, because plants that flower during those months would flower again profusely in May or just preceding outdoor Roses, and then they would be almost as valuable as what they would earlier in the year. The blooms might not be so large, but they would invariably find a ready sale. This year Roses were very scarce for a few weeks before outdoor ones came in, and buyers would have been glad of the small buds of Safrano and Isabella Sprunt that they would have despised a month earlier. I certainly advise planting them out in preference to keeping them in pots, and although they might take up the house the whole of the season the better blooms they would produce, and the greater quantity they would yield, would render them more remunerative than if they were grown in pots, so that they could be turned out when the weather was sufficiently genial, and the house occupied with other plants. One of the reasons why I advised the use of moveable lights was because, when growing for the market, it is necessary in these days of keen competition and low prices to make the most of things. The lights could be utilised for the culture of other things when the Roses did not need them. If unnecessary to keep Roses in pots under glass the whole of the season, why is it necessary to keep those that are planted out? As far as my experience goes, for the sake of a little extra cost in construction, a certain amount of glass is practically idle when it might be utilised for the culture of other plants.

A grower who had large quantities of Niphetos and other varieties in pots for yielding flowers for the market was advised by a friend and myself to plant them out. For this purpose he erected a span-roofed house, 80 or 90 feet long and 20 feet wide for them, and is thoroughly satisfied with the results. I should not advise the erection of houses for Roses with only side beds, I prefer a bed in the middle as well as on the sides. But if I had houses of this description I should not hesitate planting the Roses out in preference to keeping them in pots.—WM. BARDNEY.

ROSES AT BIRMINGHAM.

A CORRESPONDENT sends the following note respecting the Exhibition recently held in Birmingham. "It was an excellent show. Mr. T. B. Hall and Mr. Grant said that the quality of the Roses was far ahead of the Crystal Palace National Show. Mr. Grant showed in very fine form, also Mr. Hall, Paul & Son, and Messrs. Jefferies & Son of Cirencester, showed very well indeed. Of course the feature of the general, or as the French say, the "tout ensemble," of the Show centred itself on the Delphiniums exhibited from Alderminster. One nurseryman had the impudence to put in no less than three Marie Baumanns in a stand of twenty-four. One named correctly, the other two sweet "Maries" being named respectively Duchess of Bedford and Mrs. Harry Turner. This box of twenty-four was thrown out, not because of the duplicates or triplicates, but because of its manifest inferiority. It was only after the judging that attention was called to the subject."

ELTHAM.

IN this uncertain and disappointing season it was something for the promoters of this Show to have secured a fine morning, and the grounds of Eltham Court, the residence of Mr. Bloxam, in which the Show was held, looked very pleasant in the bright sunshine, although threatening clouds seemed to portend already the rain, which was so universal. On the following day, Sunday, however, the most was made of the glimpse of fine weather, and while here, as elsewhere, lamentations were many and great over the failure of fondly cherished hopes, yet a good show was held, small in extent, but with some fine flowers exhibited.

The Eltham Show is a small one at the best of times, and although it offers open prizes which have frequently brought some of our large nurserymen from a distance, yet the fixture of Manchester on the same

day prevented many from coming, while the absence of Mrs. Fuller, in the amateurs' classes, deprived it of the very fine stands which she is in the habit of exhibiting. The decorations and the exhibits of cottagers' produce combined to make a pretty and interesting show.

In the open classes for twenty-four varieties Mr. R. E. West of Reigate was first with François Michelon, Le Havre, Alfred Colomb, Etienne Levet, Marguerite Brassac, Marie Baumann, Marie Finger, U. Brunner, Duke of Edinburgh, Madame Eugène Verdier, A. K. Williams, Captain Christy, Annie Wood, La France, Baronne Adolphe de Rothschild, Dr. Andry, Duke of Teck, Pierre Notting, a flower now seldom seen, and discarded by most on account of its difficulty in opening; Mrs. George Dickson, Prince Arthur, Comtesse d'Oxford, Louis Van Houtte, and Baroness Rothschild. Mr. West was also first in twelves with François Michelon, Baroness Rothschild, Etienne Levet, Marie Finger, Duke of Edinburgh, Alfred Colomb, Charles Lefebvre, Marie Baumann, Captain Christy, Dr. Andry, Madame Victor Verdier, and Ulrich Brunner. In the class for twelve Teas the first prize was awarded to Mr. Burnand, another Reigate grower, who has recently entered the field, and whose success will, we may hope, lead him to greater efforts. His box contained good blooms of Madame Lambard, Innocente Pirola, Souvenir d'un Ami, Rubens, Isabella Sprunt, Andromede, two Roses which one very seldom sees now; Letty Coles, Prince of Wales, Amazone, Caroline Kuster, Jules Finger, Marie Van Houtte.

In the class for amateurs, eighteen single varieties, the first prize was awarded for a box containing Duke of Edinburgh, Madame Montet, Eugène Verdier, Marie Baumann, Madame Hippolyte Jamain, A. K. Williams, E. Y. Teas, Merveille de Lyon, Madame Thérèse Levet, Fisher Holmes, Villaret de Joyeuse, Charles Lefebvre, Marie Verdier, Sir Garnet Wolseley, Madame Charles, Ulrich Brunner, and John Hopper. In the class for twelve the first prize was gained for a capital stand of flowers, consisting of Etienne Levet, Duke of Edinburgh, Fisher Holmes, Villaret de Joyeuse, A. K. Williams, Baroness Rothschild, François Michelon, Madame Hippolyte Jamain, Madame Montet, Madame Isaac Percire, and Abel Grand.

These were the principal classes. I cannot, however, pass by without mentioning it, the very beautiful table and other decorations which were exhibited. Some were exceedingly tasteful and elegant in design, and I think the basket of Roses contributed by Miss Bloxam was the prettiest I have ever seen, and I have seen a good many. I have always held that there are few flowers more difficult to arrange than the Rose, and that most of those arrangements which I have seen are lumpy and inelegant, but this was delightful. It was composed almost entirely of three kinds—Mdlle. Eugénie Verdier. Princess Louise Victoria, and a climbing Rose called Alice Grey, not often seen; the flowers in all cases were small, and the buds were about half open. There was a little dark foliage interspersed, but very little, and the whole effect was elegant in the extreme. One of the table decorations which mainly depended on the three varieties of Papaver nudicaule was also remarkably good.

CHRISTLETON.

The beautiful grounds of Christleton Rectory did not show to advantage on the dreary morning of Monday, the 16th July, when the annual Show was held. This was to be deplored, not merely for the sake of the exhibitors whose energies it considerably taxed to cut Roses after such a day as Cheshire experienced on the previous day, when it hardly ceased raining for twenty-four hours, but because the day is the fête day of the village, in which all take an interest. However, the rain ceased in the afternoon, so that the gloomy anticipations of the morning were not quite fulfilled. Still it entailed much disappointment and considerable loss to the promoters of the Show.

The Show was held as usual in a tent in the Rectory field. There was an excellent display of Roses despite all adverse circumstances; it also contained a most admirable exhibition of hardy herbaceous flowers. The Rev. Lionel Garnet and his brothers are keen and successful cultivators of herbaceous plants, and the stands exhibited, despite the bad weather, were of excellent quality, well grown, clean, and beautiful. A very large number of those who attended the Show were attracted by these collections. Many note books were in requisition, and let us hope will be used afterwards in giving orders; but one is painfully conscious in how many cases this is a mere sham, and the fashionable ladies who make them would begrudge a shilling for a Rose plant, though they will give it readily for a Rose bloom, and probably consider the herbaceous plants as nothing but weeds.

In the class for nurserymen, thirty-six blooms, there were Messrs. Harkness & Sons, Bedale, and Messrs. Dickson (Limited) Chester, who occupied places in the order named. Messrs. Harkness's Roses, which were of fine quality and brilliant in colour, comprised Ulrich Brunner, Lady Mary Fitzwilliam, Madame Montet, Heinrich Schultheis, Madame Caroline Kuster, Comtesse Tretiakoff, Merveille de Lyon, Mons. Noman, Souvenir de Gabrielle Drevet, Charles Darwin, La France, Horace Vernet, Rubens (a remarkably fine bloom), A. K. Williams, Alphonse Soupert, Prince Arthur (splendid in colour), Senateur Vaisse, Maréchal Niel, Duke of Teck, Souvenir de Paul Neyron, Duke of Edinburgh, Souvenir d'un Ami (excellent), Général Jacqueminot, May Quennell, Magna Charta, Innocente Pirola, Etienne Levet, Pride of Waltham, Innocente Pirola, E. Y. Teas, Marie Van Houtte, Marie Baumann, Crown Prince, Madame Lambard, Madame Charles Wood, and Queen of Queens. In the open class for twenty-four blooms the first prize was awarded to T. B. Hall, Esq., Larkwood, Rockferry, for a good box of bloom, consisting of A. K. Williams, Marie Finger, Charles Lefebvre, Ulrich Brunner, Captain Christy, Duke of Edinburgh, Comte de Raimbaud, Merveille de Lyon, Marie Baumann, François Michelon, Louis Van Houtte, Dr. Andry, La France, Duke of Teck, Etienne Levet, Rosieriste Jacobs, Marie Verdier, Alfred Colomb, William Warden, Prince Camille de Rohan, Général Jacqueminot, Madame Hippolyte Jamain, and Thomas Mills. In the class for twelve trebles the first prize box contained Charles Lefebvre, Captain Christy, Marie Baumann, Madame Hippolyte Jamain, A. K. Williams, Marie Finger, Etienne Levet, Louis Van Houtte, Baroness Rothschild, Duke of Edinburgh. In the class for twelve Roses of one variety (dark), Messrs. Dicksons were first with Alfred Colomb, and Messrs. Harkness second with A. K. Williams; and in twelve light Roses Dicksons were first with Baroness Rothschild.

In the class for twelve there was a very sharp competition, eight boxes being staged, and Colonel Standish Hore of St. Asaph was first with a wonderfully fine box consisting of A. K. Williams, The Bride, Lord Bacon, Madame Caroline Kuster, Duc de Wellington, Marie Van Houtte, Camille Bernardin, Le Havre, Hon. Edith Gifford, Fisher Holmes, and Belle Lyonnaise. Mr. S. J. Charton was second with Dr. Andry, Madame Gabriel Luizet, Ulrich Brunner, Madame Isaac Pereire, Comtesse de Paris, Duke of Teck, Baroness Rothschild, Marie Baumann, Duke of Wellington, Madame Montet, Prince Camille de Rohan, and Merveille de Lyon. In the class for six Col. Hore was again first with a marvellous bloom of Horace Vernet, also A. K. Williams, Dupuy Jamain, Anna Ollivier, Charles Darwin, and Alfred Colomb. Desborough Walford Esq., was second with Madame Isaac Pereire, Captain Christy, A. K. Williams, Louis Van Houtte, Baroness Rothschild, and Ulrich Brunner.

In the class for twelve Teas there was a sharp competition, and a very close run for the gold medal of the National Rose Society, between T. B. Hall Esq. and the Rev. Lionel Garnet, who were ultimately placed in the order named. Mr. Hall's blooms were Grace Darling, Etoile de Lyon Madame de Watteville, Madame Willermoz, Comtesse de Nadaillac, Souvenir d'un Ami, Marie Van Houtte, Madame Cusin, Souvenir de Paul Neyron, Francisca Kruger, President and Sunset. Mr. Garnet's flowers were Catherine Mermet, Innocente Pirola, Marie Van Houtte, Madame Cusin, Madame Lambard, Caroline Kuster, Francisca Kruger, Souvenir de Paul Neyron, Comtesse Panine, and two others. In the class for six Teas Colonel Standish Hore was first with Francisca Kruger, Madame Cusin, Innocente Pirola, Souvenir d'un Ami. Mr. W. E. Hall was second with Hon. Edith Gifford, W. A. Richardson, Marie Van Houtte, Innocente Pirola, and two others.

One of the great features of the Christleton Show always is the exhibition of herbaceous plants. Both the Rev. L. Garnet and his brother, Mr. W. Garnet of Lancaster, are enthusiastic lovers of this beautiful and interesting class of plants, and have done much to encourage their culture in this neighbourhood. There are three classes devoted to them, one for thirty-six varieties, another for twenty-four, and a third for twelve. These were well contested by the Messrs. Garnet, Miss Hall, and others. The arrangement of the stands was very effective, and contributed much to the general effect of the Show. In order to show what wealth of beauty there was I give here the list of the premier stand in the Exhibition, that contributed by the Rector himself—Eryngium amethystinum, Hemerocallis fulva, Galega officinalis, Lilium umbellatum, Delphinium seedlings, Lilium croceum, L. pardalinum, Malva moschata alba, Pentstemon barbatus, English Iris, Œnothera Youngi, Campanula grandis (blue), Chrysanthemum maximum, Centaurea macrocephala, Alstrœmeria chilensis, Scabiosa caucasica, Gladiolus Colvilli The Bride, Erigeron speciosum, Helenium Bolanderi, Delphinium sinense (blue), Gaillardia maxima, Phlox Lady Napier, Lilium Thunbergianum, Aquilegia cœrulea hybrida, Lychnis Haageana, Bupthalmum salicifolium, Centaureadealbata, Jasione perennis, Potentilla Phœbus, Campanula Hendersoni, Papaver nudicaule miniatum, Campanula Trachelium fl.-pl., Lilium Thunbergianum citrinum, Matricaria inodora fl.-pl., Catananche cœrulea; and I have only to add that I think it would be a good thing if Rose societies would follow this excellent example. These flowers are always interesting, and they tend to break up the dead level of the Rose boxes, besides giving an interest to many who do not perhaps particularly care for show Roses.

WIRRAL.

In delightful contrast to the Exhibition of last year, the Show at Birkenhead brought together the largest exhibition that the Society has ever held, and whereas last season there were only a few of the growers for sale present, this year the firms of Cant, Paul, Harkness, Jefferies, Dickson, Cooling, Prince, F. Cant, Burch, and others were well represented, while the leading amateurs, Grant, Hall, Pemberton, Burnside, Page Roberts, &c., came in great force, and not only was there quantity, but also quality; indeed, I am fain to acknowledge, and that after having seen the National Rose Society's Show at Darlington, that in this respect Wirral has come to the front. At none of the shows at which I have been present, and I have been present at most of the important ones—indeed, I may say all, except Manchester and Birmingham—have I seen Roses in such excellent form. Again has it been the case, too, that the amateurs have fairly gone ahead of the nurserymen in this respect, and no finer Roses have been exhibited this season than those contributed by Mr. Grant of Ledbury. His Roses at Gloucester were good, but those exhibited at Birkenhead were better. Especially are his flowers remarkable for their fine form; the centres are so well built up, and there is so much substance in them, that they are sure to hold a prominent place. The Teas, too, were exceptionally fine on this occasion, and when one saw the stand which had gained only a card of commendation, and knew that there were there others better than it, I

could not but think of the Teas of a few years back, when such a stand would have occupied a leading position. The night before had been wet—indeed, I believe, raining all night, and the morning broke with lowering clouds on which no dependance could be plac d : however, happily this cleared away, and the day became sunshiny and fine, but not too hot for the Roses, which stood well, and did not open their eyes on the visitors until quite late in the day.

Taking, then, the nurserymen's classes first, there was a very sharp contest in the seventy-twos, the first prize, after a very long examination, being awarded to Mr. B. R. Cant of Colchester for a fine stand of the following flowers—Madame Isaac Pereire, Marguerite de St. Amand, Alfred Colomb, Magna Charta, Gloire de Bourg-la-Reine (very bright), Etienne Levet, Mrs. Charles Wood, Jean Ducher, Madame Prosper Laugier, Merveille de Lyon, Mauriee Bernardin, François Michelon, Mrs. Harry Turner, Madame Eugène Verdier, Coun'ess of Rosebery, Marie Finger, Comtesse d'Oxford, Madame Gabriel Luizet, A. K. Williams, Marie Baumann, Ulrich Brunner, La France, Baron Haussman, Pride of Waltham, Duchesse de Morny, Violette Bouyer, Emilie Hausburg, Mr. John Laing (a good Rose), Mrs. Baker, Souvenir d'Elise Vardon, Benoit Comte, Pierre Notting, Her Majesty, Raoul Duval, Marie Baumann, Charles Lefebvre, Catherine Mermet, Le Havre, Lady Mary Fitzwilliam, Madame Victor Verdier, Marguerite de Roman, Duke of Edinburgh, Madame Ducher, Xavier Olibo, Captain Christy, Louis Van Houtte, Marquise de Castellane, Thomas Mills, Madame Cusin, Madame Charles Crapelet, Madame de Watteville, Pierre Carnot, Anna Ollivier, Beauty of Waltham, Madame Montet, E. Y. Teas, Madame Lambard, Duc de Wellington, Rubens, Colonel Felix Breton, Triomphe de Rennes, Comte de Paris, Niphetos, Earl of Pembroke, Madame Raoul Chandon, Général Jacqueminot, The Bride, Horace Vernet, Mary Bennett, Le Havre, and Innocente Pirola. Messrs. Paul & Son were second, and Mr. F. Cant third.

In Class 2, for thirty-six trebles, Mr. B. R. Cant was again first with the following : François Michelon, Général Jacqueminot, Madame Eugène Verdier, Marie Baumann, Her Majesty (a fine tri let), Prince Arthur (beautifully coloured), Baroness Rothschild, Ulrich Brunner, Marie Fin.er, Etienne Levet, La France, Duke of Edinburgh, Pride of Waltham, Beauty of Waltham, Alphonse Soupert, Alfred Colomb, François Michelon, A. K. Williams, Mrs. John Laing, Edouard Herve, Catherine Mermet, Charles Lefebvre, Madame de Watteville, Mauriee Bernardin, Marie Verdier, Countess of Rosebery, Violette Bouyer, Duc de Wellington, The Bride, Mrs. Baker (very good), Niphetos, Duchesse de Morny, Souvenir d' Elise Vardon, Madame Charles Crapelet, Innocente Pirola, and Le Havre. Mr. Frank Cant was second, and Messrs. Paul and Son third. For thirty-six single blooms Messrs. Keynes, Williams and Co., of Salisbury, were first with fine blooms of Countess of Oxford, Lady Mary Fitzwilliam, Heinrich Schultheis, Madame Charles Wood, Etienne Levet, Francisca Kruger, Alfred Colomb, Her Majesty, Duke of Edinburgh, Marveille de Lyon, Madame de la Place, La France, Camille Bernardin, Baron Gonella, A. K. Williams, Elie Morel, Marie Baumann, Eugène Verdier, Ulrich Brunner, Souvenir d'Elise Vardon, Alphonse Soupert, Niphetos, Horace Vernet, Marie Verdier, Emilie Fontaine (a good flower), Marie Van Houtte, Beauty of Waltham, Innocente Pirola, Dr. Sewell, Catherine Mermet, Fisher Holmes, Madame de Watteville, Duc de Wellington, Eugène Verdier, Charles Lefebvre, and The Bride. Second, Messrs. Burch of Colchester ; third, Messrs. Dickson (Limited) of Chester, and fourth Mr. Geo. Prince, Oxford. In Class 4, for twenty-four, Messrs. Burch were first with Marie Verdier, Exposition de Brie, Anna Ollivier, Etienne Levet, Captain Christy, Comtesse d'Oxford, Etienne Levet, Marie Finger, Duchess of Bedford, Emilie Hausburg, Fisher Holmes, Innocente Pirola, Madame Cusin, Merveille de Lyon, A. K. Williams, Madame Bravy, Horace Vernet, and Ulrich Brunner. Equal second, Mr. Geo. Prince and Messrs. Jefferies & Son ; third, Messrs. Dickson. In class 5, for eighteen Teas, Mr. Geo. Prince was first with Niphetos, Comtesse de Nadaillac, Innocente Pirola, Souvenir d'Elise Vardon, Marie Van Houtte, Adam, Madame Cusin, Alba Rosea, Souvenir d'un Ami, Mons. Furtado, Madame Lambard, Caroline Kuster, The Bride, Francisca Kruger, Souvenir de Sarah Prince (very good), Jean Ducher, Hon. Edith Gifford, and Rubens. Mr. F. Cant was second, and Messrs. Paul & Son third. In class 6, for twelve new Roses, Messrs. Paul & Son were first with Madame Boucharlet, Her Majesty, Victor Hugo (a fine Rose), Silver Queen, Mrs. John Laing (good), Madame Joseph Desbois, Earl of Dufferin, Madame Norman Neruda, The Bride, Grand Mogul (a most promising Rose), Madame Thibaut aîné, and Longfellow.

In the amateurs' class for thirty-six blooms the first prize was awarded to Mr. W. J. Grant, who was in fine form. His flowers were Madame Gabriel Luizet, Dr. Andry, Her Majesty, Marie Baumann, François Michelon, Mrs. Charles Wood, Madame Eugène Verdier, Ulrich Brunner, Mdlle. Susan Rodernahia (a fine Rose, notwithstanding its jaw-breaking name), Beauty of Waltham, La France, Etienne Levet, Dupuy Jamain, Madame Sophie Fropot, Marie Finger, Marie Verdier, Marie Van Houtte, Duke of Edinburgh, Duchesse de Morny, A. K. Williams, Baroness Rothschild, Prince Arthur, Princess of Wales, Auguste Rigotard, Mrs. John Laing, Duchess of Bedford, Souvenir d'un Ami, Comte Raimbaud, Marquise de Castellane, Louis Van Houtte, Rubens (seedling, a promising dark flower), Merveille de Lyon, Jean Soupert, and Le Havre. The Rev. J. H. Pemberton was second, and Mr. T. B. Hall third.

In class 8, for twenty-four, Mr. Hall (?) was first with Madame Eugène Verdier, Merveille de Lyon, Senateur Vaisse, Her Majesty, Ulrich Brunner Etienne Levet, Thomas Mills, La France, Captain Christy, Le Havre, Innocente Pirola, J. S. Mill, Niphetos, Duke of Edinburgh, Catherine Mermet, Alfred Colomb, John Bright, Madame de Watteville, Fisher Holmes, Comtesse de Nadaillac, Earl of Pembroke, Dupuy Jamain, Jean Soupert, Lady Mary Fitzwilliam. Second, the Rev. F. Page Roberts of Seole ; and third, Mr. A. Tate. In class 9, for trebles, Mr. W. J. Grant was first with A. K. Williams, Marie Finger, Marie Baumann, Captain Christy, Lord Macaulay, Etienne Levet, François Michelon, Dupuy Jamain, La France, Duchess of Bedford (a fine triplet), Ulrich Brunner, Louis Van Houtte, Duchesse de Morny, Duke of Edinburgh, Baroness Rothschild, Marie Finger, Marie Baumann, Madame Lambard, Général Jacqueminot, Marie Verdier, and Prince Arthur. The Rev. J. H. Pemberton was second, and Mr. T. B. Hall third. In class 10, for twelve Teas, there was a very sharp competition, the first prize being awarded to the Rev. Hugh A. Berners of Harkstead Vicarage, Ipswich, for a beautiful stand of Catherine Mermet, Comtesse de Nadaillac, Innocente Pirola, Françisca Kruger, Souvenir de Paul Neyron, Comtesse Riza du Pare (without donbt the best bloom I have ever seen of this most uncertain flower), Souvenir d'Elise Vardon, Marie Van Houtte, Princess of Wales, Rubens, Madame de Watteville, and the Hon. Edith Gifford. The Rev. F. R. Burnside and Mr. W. J. Grant were an equal second, and the Rev. F. Page Roberts highly commended. A most beautiful class.

In class 11, for twelve of one kind, dark, the prize was awarded to Ulrich Brunner ; second, Alfred Colomb. In class 12, twelve of one colour, light, Marie Finger gained the first and second places, and La France the third. In class 14, for twenty-four, to which the gold medal was awarded for growers in Cheshire and Lancashire, the first prize was gained by T. B. Hall, Esq., for a fine box containirg Ulrich Brunner, Louis Van Houtte, Merveille de Lyon, Duchess of Bedford, Madame Isaac Pereire, Général Jacqueminot, Baroness Rothschild, La France, Marie Finger, Dupuy Jamain, Fisher Holmes, Captain Christy, A. K. Williams, François Michelon, Monte Christo, Etienne Levet, Madame de la Place, William Warden, Paul Neyron, Le Havre, Alfred Colomb, Dr. Andry, E gène Verdier, Madame Lambard. In class 15, for twelve, Mr. A. H. Hodgson was first with Louis Van Houtte, Camille Bernardin, Captain Christy, Dr. Andry, Comtesse de Serenyi, Abel Carrière, Baroness Rothschild, Etienne Levet, Marie Verdier, Madame Rady, François Michelon, Senateur Vaisse, and Countess of Oxford. It was run very close by the Misses Squarry, who were second with Marie Baumann, La France, Dupuy Jamain, Le Havre, Alfred Colomb, Horace Vernet, Captain Christy, Prince Arthur, Duc de Wellington, Marie Finger, Général Jacqueminot, and Marquise de Castellane. In class 17, for twelve Teas, Mr. T. B. Hall was first with excellent blooms of Anna Ollivier, Madame Margottin, Madame de Watteville, Madame Cusin, Jean Ducher, Catherine Mermet, Marie Van Houtte, Prince of Wales, Souvenir d'un Ami, Comtesse de Nadaillac, Souvenir d'Elise Vardon, and Francisca Kruger. Mr. E. Claxton was second. In this box was also the best Tea in the amateurs' class awarded the silver medal, a fine bloom of Comtesse de Nadaillac. In class 19, for six Teas, Mr. W. C. Hall was first with Madame Lambard, Jean Ducher, Anna Ollivier, Madame Willermoz, Catherine Mermet, and Alba Rosea. In class 20, for Roses with Maidenhair foliage, a prize given by the zealous Secretary, Mr. Chas. E. Hall. The first prize was awarded to T. B. Hall, Esq., and the second to the Rev. Canon Fielden.

Thus ends my record of which I believe to have been the best show, as far as quality is concerned, of the season, and I think the promoters of Rose-growing in Wirrall may be congratulated on the great improvement which has taken place in the local classes, which after all is the most important point.—D., *Deal*.

IPSWICH.

THE summer Show of the Ipswich and East of England Horticultural Society was held in the beautiful grounds of Christ Church Park on Wednesday, July 13th. Unfortunately the weather was most unpropitious, rain falling in torrents during the greater portion of the day, consequently the attendance was very small, and the Society suffered a great financial loss. The exhibits were shown in two splendid marquees, one set apart for Roses and pot plants, the other for fruit and vegetables. The Roses nearly filled the whole of the table in the centre of the tent, and made a most magnificent show. In the open classes for thirty single trusses Mr. B. Cant was first with good blooms, the most noteworthy being Horace Vernet, Ulrich Brunner, Dupuy Jamain, Merveille de Lyon, Marie Finger, and Victor Hugo. Mr. F. Cant was second with fine flowers of A. Colomb, Baroness Rothschild, Her Majesty, L'Exposition de Brie. In the open classes for twelve triplets, Mr. B. R. Cant was first, Mr. F. Cant second, and the Rev. Foster Melliar, Sproughton Rectory, was third. The latter in the opinion of many good judges ought to have been placed second in this class. For the best twelve Teas and Noisettes, open, Mr. F. Cant was first, Mr. B. R. Cant second.

In the amateurs' classes the blooms were exceptionally fine, and a grander show of the queen of flowers has not been seen in East Anglia for some time past. In the thirty-six class the Rev. Foster Melliar was first with grand blooms ; the best flowers were Duke of Edinburgh, Thomas Mills, Marie Van Houtte, Horace Vernet. The Rev. Hugh Berners, Harkstead Rectory, was second with neat but not quite such large flowers. Third, Miss Penrice.

For twenty-four blooms, single trusses, Rev. H. Frere, Burston Rectory, Diss, was first ; Mr. Palmer, gardener to T. Power, Esq., Drinkstone Park, second. For twelve, Rev. H. A. Berners took first, the Rev. Foster Melliar second.

For six blooms of any Roses Rev. H. Berners was first; and Mr. Palmer second with Duke of Edinburgh.

In the class for twelve Teas and Noisettes Rev. H. A. Berners, who has been showing Tea Roses grandly all the season, and has won seven first prizes, was first with beautiful blooms of Comtesse de Nadaillac, Madame de Watteville, Souvenir d'Elise, Innocente Pirola, Anna Ollivier, Catherine Mermet, Madame Lambard, Marie Van Houtte, Marie Guillot, Edith Gifford, Jean Ducher, Souvenir d'un Ami. Second, Rev. Page Roberts; third, Rev. Foster Melliar. In the class for six distinct varieties Mr. D. C. Orpen first.

Fruit, notwithstanding the late season, was good. Lord Rendlesham (gardener, Mr. Rogers) was first with a good collection, his Peaches and Nectarines being very fine; he took the first prizes for Peaches and Nectarines.

Vegetables were very fine. The collections shown by Mr. Cresswell, gardener to W. Charteris. Esq., of Stoke Park, and Mr. Andrews, gardener to Hon. T. Lowther, were very good.

The stands of cut flowers shown by lady amateurs were beautifully arranged and much admired, the first prize being taken by Mrs. H. E. Archer, and the second and third by Miss Steward, Graham House, and Miss M. E. Turner, Clare Lodge.

NATIONAL ROSE SOCIETY'S SHOW AT DARLINGTON.

JULY 20TH.

WE have been favoured by the following clipping from the *Northern Echo* descriptive of the provincial Show at Darlington.

The promoters of the annual provincial Show of the National Rose Society at Darlington might well be pardoned if they prematurely exulted over the magnificent weather which they believed had favoured their venture of Saturday, for up to three o'clock in the afternoon everything was brilliantly fine, although there were those who spoke ominously of the hot close character of the atmosphere as boding rain. And these latter told an ower-true tale. The English climate once more showed up as "fickle as a changeful dream, fantastic as a woman's mood." It was about the time for excursionists to put in appearance when a sharp shower of straight-down rain obtruded its unwelcome presence on the scene, although Southend Park—wherein the Show was held by the kind courtesy of the Misses Pease—with its noble trees, is well adapted for affording shelter in a passing thunderstorm. Hereafter, for the rest of the day the sky wore a leaden look, and the air was extremely sultry.

The last occasion upon which the National Rose Society honoured Darlington in this way was in July, 1882, when the entries were gratifyingly large. To indicate the extent to which the cultivation of the Rose has increased throughout the country we may compare that figure with the blooms which were now entered. There were upwards of 50 per cent. more entries for Saturday's Show than for that in 1882. Unfortunately the season in the north is at least a fortnight late, and the consequence was that very many rosarians in the district of Darlington were unable to stage the blooms they had intended, so that the actual exhibits fell short of the entries. For example, there was Mr. E. R. Whitwell, the noted grower of Barton. He had entered several classes, but at the last moment found it impossible to cut Roses of tolerable form and colour sufficient to fill a single stand. Taken as a whole, the blooms that were shown did not comprise such fine individual specimens as in previous years, nor was the quality quite so good as has been seen at shows held this year elsewhere. In spite of the backward season, however, the collection of specimens, set out most effectively in a marquee 60 yards in length, pleased the eye with its effect of rich and varied hues.

It is safe to say that the best stand in the Show was that which won the amateurs' Jubilee trophy, and put up by Mr. T. B. Hall, Rock Ferry, Birkenhead, who carried off the challenge trophy last year. A feature of the Exhibition was the distinct hit made by Messrs. Harkness & Co. of Bedale, to whom again fell the challenge trophy (valued at £50) in the professional division. Their blooms were unexceptionable for cleanness and finish, although they had not the substance of those of the southern growers, who have had better weather than their northern competitors. Naturally the Tea Roses were deficient, their outer leaves being generally weather-beaten, except in the case of Messrs. Harkness, who had the advantage over southern growers of being able to cut overnight, and whose blooms were firm and fresh, and proved very successful on the stands. This firm was entitled to every praise for the admirable way in which they have sustained the reputation of the north.

Besides the challenge trophies already referred to, the National Society offered three silver medals—one for the best Hybrid Perpetual, one for the best Tea or Noisette in the amateur class, and one for the best box of Roses shown in the district classes. The first-named medal was given to Mr. E. B. Lindsell for Her Majesty, a bright satiny Rose, with flowers exceptionally large, very full, and the petals most symmetrically arranged. The medal for the best Tea Rose fell to the Rev. F. R. Burnside, Gloucestershire, for Marie Van Houtte, a large and full bloom, charming in its combination of yellow and peach. Mr. A. Whitton, Bedale, took the third medal for the best box shown by district growers. The gold medal of the National Society was offered for three trusses of any new seedling Rose not yet in commerce; but there were no entries in the class.

The duties of judging were performed by the nurserymen for the amateur classes, and by the amateur exhibitors for the professional divisions. The Rev. H. Honywood D'Ombrain was in attendance, and expressed himself thoroughly satisfied with the general arrangements, for the excellence of which warm praise is due to Mr. E. R. Whitwell and Mr. G. S. Byers, the local Secretaries.

Appended are the names of the Judges, together with their awards:—

Nurserymen's Divisions.—Rev. J. H. Pemberton, Mr. E. R. Whitwell, Mr. T. B. Hall, Lieut.-Col. Standish Hore, Mr. W. E. Boyes, Mr. James E. Backhouse, Rev. Page-Roberts, Mr. W. E. Hall, Rev. H. H. D'Ombrain (Secretary), and Rev. Foster-Melliar. Amateur Sections.—Messrs. J. Burrell, W. Burch, H. W. Williams, G. Paul, G. Prince, W. F. Cooling, J. Jefferies, Harkness, jun.

Nurserymen (open). — Thirty-six dissimilar, single trusses. First and challenge trophy, Messrs. Harkness & Son, Bedale. Second, Messrs. Paul & Son, Cheshunt. Third, Mr. B. R. Cant, Colchester. Fourth, Messrs. Keynes, Williams & Co., Salisbury. Seventy-two dissimilar, single trusses, Messrs. Paul & Son, Cheshunt, Second Mr. P. R. Cant. Third, Messrs. Cranston & Co., Hereford. Thirty-six dissimilar, three trusses of each, Messrs. Paul & Son. Second, Mr. B. R. Cant. Third, Cranston & Co. Thirty-six disssmilar, single trusses, Messrs. J. Jefferies & Son, Cirencester. Second, Mr. W. H. Frettingham, Beeston, Notts. Third, G. & W. H. Burch, Peterborough. Fourth, J. Burrell and Co., Cambridge. Eighteen dissimilar, three trusses of each. Messrs. J. Jefferies & Son. Second, Messrs. G. Cooling & Sons, Bath. Third, Messrs. Burch. Fourth, Messrs. Keynes, Williams & Co.

Amateur Division.—Twenty-four dissimilar, single trusses, first and challenge trophy, Mr. T. B. Hall, Rock Ferry, Birkenhead; second, Rev. J. H. Pemberton, Romford, Essex; third, Mr. S. P. Budd, Bath; fourth, Mr. A. Slaughter, Steyning, Sussex. Thirty-six dissimilar, single trusses, Rev. J. H. Pemberton; second, Mr. T. B. Hall. Twelve dissimilar, three trusses each, Rev. J. H. Pemberton; second, Mr. T. B. Hall; third, Mr. S. P. Budd. Twenty-four dissimilar, single trusses, Mr. E. B. Lindsell, Hitchin; second, Rev. A. Foster-Melliar, Ipswich; third, Mr. E. Mawley, Berkhampstead, Herts; fourth, Mr. A. Slaughter. Twelve dissimilar, ditto, Lieut.-Col. F. Standish Hore, St. Asaph; second, Mr. W. Hutchinson, Kirbymoorside; third, Mr. W. E. Hall, Birkenhead; fourth, Rev. F. Page-Roberts, Scole, Norfolk. Six dissimilar, ditto, Miss Alice M. Lucas, Hitchin; second, Mr. H. V. Edwards, Machworth, Derby.

Division E (open to residents within thirty miles of Darlington, who have never won a first prize at any exhibition of the National Rose Society held elsewhere than at Darlington), twelve dissimilar, single trusses, Mr. A. Whitton, Bedale; second, Mrs. Maynard Proud, East Layton Hall, Darlington; third, Mr. D. Green, Scorton. Six dissimilar, ditto, Mr. W. E. Brown, 22, Milton Street, Darlington. Extra Class—Six new Roses, distinct, single trusses, Rev. A. Foster-Melliar.

Tea and Noisette division (open).—Twelve Teas or Noisettes, three trusses of each, Messrs. Harkness & Son; second, Mr. G. Prince, Oxford; third, Rev. F. R. Burnside, Chipping Campden, Gloucestershire; fourth, Mr. B. R. Cant. Nurserymen, eighteen ditto, single, Mr. G. Prince; second, Mr. B. R. Cant. Two ditto, ditto, Messrs. Harkness & Son; equal seconds, Messrs. J. Jefferies & Son and Messrs. Keynes, Williams and Co.; Fourth, Messrs. Paul & Son. Amateurs, twelve single trusses, Rev. F. R. Burnside; second, Mr. E. B. Lindsell; third, Rev. F. Page-Roberts; fourth, Mr. A. Slaughter. Six ditto, Rev. A. Foster-Melliar; second, Mr. E. Mawley; third, Colonel Standish Hore; fourth, Mrs. Times, Hitchin.

Open Division.—Twelve new Roses, dissimilar, single trusses, Paul and Son. Twelve single trusses of any yellow Rose, Mr. G. Prince. Second, Mr. B. R. Cant. Third, Messrs. R. Mack & Son, Catterick. Twelve white Roses, Messrs. Burch. Second, Mr. S. P. Budd. Third, Mr. G. Prince. Extra prize, Rev. F. P. Roberts. Twelve single crimson ditto, Messrs. Cranston & Co. Second, Mr. S. P. Budd. Third, Mr. W. H. Frettingham. Twelve dark crimson ditto, Messrs. Cranston and Co. Second, Messrs, G. Cooling & Sons. Third, Mr. B. R. Cant. Twelve blooms, six of each, Harkness & Son. Second, Mr. B. R. Cant. Equal third, Mr. G. Prince and Messrs. Burch.

STRAWBERRIES FOR FORCING.

I AM pleased to see that Mr. Bardney thinks much more highly of saving late autumn runners for forcing than he was at first disposed to do. Allow me to thank him for again drawing attention to it, and we shall expect to hear of the success of his proposed experiment. His soil being light, I have no doubt he will succeed much better than I should do were I to adopt the same plan. The soil here is just opposite, and if I were to do as he proposed, by the middle of June I should have very gross plants, each lifting with more soil than could be crammed into a 6-inch pot. This year I left my plants in the nursery rows till June, and placed them direct into their largest pots, and I regret to say my plants are not so good as usual. The check they received in potting has thrown them back considerably. I think in most soils it would be quite unnecessary to pot before planting out in the autumn. On the other hand, on strong soils I think it is important that the plants be placed in 60's early in spring to prevent a gross growth, and have the plants so that they can be placed in their fruiting pots without a check any time when convenient during June.

Allow me here to disclaim all credit of having originated this excellent plan of treating plants for forcing. It is one of the many "wrinkles" I have gleaned from these pages during the last twenty-five years I have been a reader of them. I have practised it for eight or nine years. Perhaps some one who has a pile of back volumes can trace it to its source, and let honour be given to whom it is due.—R. INGLIS.

Notes & Gleanings

THE programme of the AUSTRIAN FRUIT EXHIBITION, to be held at Vienna, September 29th to October 7th, has been already referred to, but fuller particulars have been received, from which it appears that three sections—namely, for fruit, fruit products, and implements for fruit cultivation are set apart for Austrian exhibitors, the two others for "Competitive fruit drying," and "Machinery or implements for the cultivation of and utilisation of fruits," are international. In the circular just issued by Count Henry Attems Leechwald, Graz, Styria, full particulars are given in English respecting the two latter sections, the conditions of competition, space hire, prizes, &c.

—— FLORAL DECORATION.—We learn that on the occasion of the visit of the Prince and Princess of Wales to Holloway to open the Great Northern Hospital, the whole of the floral decorations and three bouquets were supplied gratuitously by Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, N.

——"W. J. G." writes:—"There is now in the garden of Beaconhill House, Exmouth, Devon, a tree of EUCALYPTUS GLOBULUS, which in a few days will be a beautiful sight. At present there are some hundreds of blooms, but a vast number of buds are expanding. The height of the tree is about 30 feet, and at 6 feet from the ground measures 24 inches in circumference. It was planted about seven years ago. Does not such a specimen speak well for our mild climate?"

—— TRADE NOTICE.—We are informed that Mr. A. W. Crews having relinquished the managership of the Chad Valley Nurseries, Birmingham, has entered into business with Mr. A. C. Cox (late of Messrs. Hugh Low & Co.) at Gloucester. The address of the firm is Crews, Cox and Co., Southgate Street, Gloucester.

—— THE HEAVIEST STRAWBERRIES.—Our correspondent "Saxoring" wishes to know the heaviest weights of individual fruits of Strawberries grown as a crop not for show or prizes, and whether any have been known weighing as much as 4 ozs. each. He says, "I have a lot this year 1½ oz. to 1¾ oz. each, and numbers of Dr. Hogg weighing 1 oz., but not one of 2 ozs." Marguerite is a large-fruiting variety, and Mr. Goldsmith, at Kelsey Manor, Beckenham, has had numerous fruits this season exceeding 2 ozs., while it is recorded that some fruit of this variety have been obtained weighing 3½ ozs. Perhaps some of our readers can give further information on this point.

—— MESSRS. CORRY, SOPER & Co. (Limited), 16, late 18, Finsbury Street, write:—"With much regret we have to announce the death of MR. GEORGE ROBERT SOPER, a member of our firm, which occurred on the 6th inst., at 300, Amhurst Road, Stoke Newington, N., after a long and painful illness."

—— THE KEW BULLETIN for July contains much interesting matter, the first article dealing with the Bhabur Grass (Ischæmum angustifolium), which is said to approach Esparto in habit and usefulness for paper-making. A chapter is devoted to the Cayman Islands and their products; another deals with Valonia in Cyprus, giving analyses of the acorn cups from several species of Oak imported from Cyprus for tanning purposes. A long article is devoted to the Prickly Pear (Opuntia) in South Africa, describing its value as fodder for sheep and ostriches, its cultivation, the species of Opuntia used, the cochineal industry, and the production of alcohol from Prickly Pears. The Star Anise, Illicium verum, with an illustration, completes a useful number.

—— GRAPES AT ELFORD.—"Visitor" sends the following paragraph:—"In July of last year some remarks appeared in the columns of the Journal respecting the fine quality of the Elford Grapes as grown by Mr J. Udale, and in a brief and hurried visit just paid by me to these fine old gardens I was glad to find that such high quality had been more than maintained during the present season. The bunches are of large size, and the berries exceptionally so. Mr. Udale told me that from careful measurements he had made he found them (Black Hamburghs) to measure from 1 to 1⅛ inch in diameter. The colour is very dense and deep, the bunches solid, and the berries have the peculiar "hammered" appearance prized by many cultivators. As they are likely to appear upon more than one exhibition table we are almost certain to hear further of these fine examples of Grape culture."

—— JUST as we go to press we regret to learn that MR. F. WHITBOURN, OF GREAT GEARIES, ILFORD, ESSEX, died suddenly on Wednesday morning. He had long been in feeble health, but was out the day before he died. For many years Mr. Whitbourn has given much encouragement to horticulture and floriculture, and his gardener, Mr. J. Douglas, is widely known as a successful exhibitor.

—— "I WISH to call attention to VERONICA TRAVERSI," writes Mr. T. Record, "because at this time of the year, when there are few hardy shrubs in flower, this is most beautiful. It is of dense habit, with a profusion of short-jointed shoots and pure white flowers, but when not in flower its narrow and pointed foliage and compact habit of growth makes it a desirable shrub. It seems also to be adapted for planting near the sea coast, for from Eastbourne along the coast to Seaford, Newhaven, and Beachy Head, it is found in most gardens, and appears to be quite as much at home in such places as the green Euonymus. The Veronica does well inland also, and may be depended upon to grow in almost any soil, and will successfully bear moving at any time of the year when not in full growth and flower. It roots freely from cuttings, which are best taken from the points of the shoots any time after growth is completed. Inserted in nursery rows under the protection of a wall I have not lost one plant out of a hundred."

—— WRITING from Builth, "T. T." says, "We have a LILIUM GIGANTEUM in flower here; it has produced three flower stems of about 9 feet high, with eight to ten blooms on a spike. It is planted around the side of a border. The natural soil here is light and very shallow, not more than 6 inches of soil in places in the garden; it lies on the rock." This noble Lily has also been flowering well at Kew this season in a somewhat sheltered nook in the rockery, and in Mr. G. F. Wilson's garden at Wisley.

—— CHRYSANTHEMUMS AND THE WEATHER.—"C. O." writes, "The recent dull and showery weather is causing a very rapid and vigorous growth this season, and I fear many of the naturally grown plants will be long-jointed and sappy, and attain undue height. Under the circumstances it would be as well to abstain from giving any stimulants and water sparingly during the absence of sunshine to induce as hard and solid a growth as possible. Strict attention should be paid to tying and securing the growth of the laterals as they extend, cutting away all but the required number to be left."

—— AT the ordinary weekly meeting of the members of the WAKEFIELD PAXTON SOCIETY, held at the "Saw Hotel," Councillor Milnes, the President, was in the chair, and Mr. Arthur Goldthorpe, who is one of the Vice-Presidents, occupied the vice-chair. There was a good attendance of the members. The annual display of Roses should have been made, and a discussion upon the queen of flowers opened by Mr. G. Bott of Walton, a well-known amateur rosarian, but in consequence of the unseasonable weather the blooms were not quite ready for exhibition, and the show and discussion on Roses was adjourned until the next meeting. Mr. Hudson, gardener at Sandal Grange, read a very interesting paper on "The Foxglove," which he strongly recommended amateur gardeners to grow in their borders and on their rockeries.

—— DIET FOR HOT WEATHER.—Mr. W. S. Manning writes:—"Fresh fruit may be taken to any extent, without fear of any ill results, if good whole-meal bread and other cereal foods are taken with them. The *Lancet* and other medical journals have been speaking out of late strongly in favour of ripe raw fruits, early in the morning especially. They afford a very beneficial gentle stimulant to the mucous membrane of the stomach, rendering dyspepsia in every form almost impossible. Let your readers, therefore, who may be subject to any of the many "ills that flesh is heir to," (mainly through ill-chosen food probably) give a steady trial to the Edenic diet of fruit and grain, and they will find that, whilst they are thus doing their best to encourage increased supplies of the most remunerative crops for the farmer, in taking ripe fruit for food and drink, they will be at the same time simply eating themselves out of their chronic ailments, especially such worrying sorts as indigestion and rheumatism, on the wholesomest, heartiest, and pleasantest fare that science can suggest."

—— In the course of an article on the Dispersion of Seeds and Plants, contributed by Mr. D. Morris to *Nature* recently, he had the following note:—"The Orange tree was introduced to Jamaica more than a hundred years ago. It is now found practically wild over the settled parts of the island, and the fruit is exported to the value of nearly £50,000 per annum. Up to quite recently very few trees were planted. Nearly the whole were sown by the agency of frugivorous birds, who carried the seeds from place to place and dropped them in native gardens, Coffee plantations, Sugar estates, and grass lands. In such localities the Orange trees grew and flourished, and now a demand has arisen for the fruit in the United States an important industry has been established, the active agents in which have been birds. The agency of birds in the distribution of the seeds of plants is too large a subject to be discussed at length here. A valuable contribution of facts in this direction has lately been made by Dr. Guppy in his important work on the Solomon Islands. As the most recent addition to our knowledge of what takes place in oceanic islands at the present time it deserves careful attention. It will suffice only to quote one or two sentences:—'Whilst through the agency of the winds and currents the waves have stocked the islet with its marginal vegetation, the fruit pigeons have been unconsciously stocking its interior with huge trees, that have sprung from the fruits and seeds they have transported in their crops from the neighbouring coasts and islets.'"

ROYAL HORTICULTURAL SOCIETY.

July 24th.

The Drill Hall, James Street, Westminster, was well filled with exhibits on Tuesday last, as in addition to the groups and plants and fruit submitted to the Floral and Fruit Committees, the National Carnation and Picotee Society held its annual Show on the same date. The competition for the prizes in the classes provided by the latter was not, however, so keen as usual, and consequently the exhibits did not occupy a very large space, but the non-competing groups amply compensated for this deficiency. Four tables extending nearly the whole length of the hall were filled with plants and flowers, a cross table at the top being devoted to fruit and vegetables, of which there was a larger display than has been the case at recent meetings.

Fruit Committee.—Present: Dr. Hogg in the chair, and Messrs. Veitch, J. Lee, J. Cheal, R. D. Blackmore, J. Burnett, G. T. Miles, W. Marshall, W. Denning, T. B. Haywood, T. J. Saltmarsh, J. Willard, J. Smith, J. Roberts, and Dr. Hogg.

Messrs. J. Veitch & Sons, Chelsea, exhibited a collection of fruit comprising very handsome examples of the large dark coloured Strawberry Waterloo, Raspberry Lord Beaconsfield (a dark-fruited variety), Raspberry Superlative with large, bright, conical fruits, a fine variety, thought by some to resemble Semper Fidelis; but the decision of the Committee was reserved until the next meeting at Chiswick. The cut-leaved White Dutch Currants, Cleveland Bigarreau, Kentish and May Duke Cherries, Negro Largo Figs in pots, and several cordon-trained Red Currants completed the collection (vote of thanks). Messrs. Paul & Son, Cheshunt, sent several fruits, amongst which samples of Elæagnus longipes edulis, some being preserved; in the fresh state the small oval fruits are exceedingly acid and astringent, not unlike the common Sloe, and certainly not more tempting. Fine bunches and berries of La Versaillaise Red and White Currants were shown, and fruits of the late prolific Strawberry Helena Gloede.

Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, was deservedly awarded a cultural commendation for a collection of extremely handsome well grown Strawberry fruits, the following varieties being represented:—Unser Fritz, very large; Sir C. Napier, British Queen, Crimson Queen, James Veitch, and Dr. Hogg. Mr. A. G. Nichols, Nuneham Park Gardens, Abingdon, showed a seedling green-flesh Melon which was unripe, but the Committee desired to see it again. Mr. D. Tallerman exhibited a number of Strawberries in cardboard boxes to illustrate the De La Vergne cold air system of refrigerating. The fruits had been gathered in Essex on July 13th, twelve days before, and were as fresh and firm as if they had only been gathered a few hours. They, however, possessed very little flavour, and as it could not be determined whether this was due to the process or not, a series of experiments was suggested that will definitely determine the value of the system. It was considered very satisfactory as regards the preservation of the fruits, and it is believed by the exhibitors that they can be kept for two months, retaining both colour and flavour. From the Society's garden at Chiswick came twenty-one dishes of Red and White Currants, including Red and White Dutch, Common White, Champagne, Red Cherry, and Defiance, which is very similar to La Versaillaise. Mr. Walker of Thame showed pods of Duke of Albany and Improved Telegraph Peas that did not obtain any special notice.

Floral Committee.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. Shirley Hibberd, H. Herbst, W. Bates, J. Fraser, W. Wilks, T. Baines, R. D an, C. Noble, C. Pilcher, H. Ballantine, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, G. Paul, and B. Wynne.

From Mr. G. F. Wilson's garden at Wisley came some handsome flowers of choice Lilies, Lilium giganteum and L. Browni being of remarkable merit, and very rarely are such large blooms of the latter seen; the L. giganteum flowers also had more deeply coloured stripes than is usually seen in this fine Lily. The others were L. Martagon var. dalmaticum, very rich and dark; L. elegans, L. sanguineum, L. cruentum, L. avenaceum, L. concolor, and L. Coridion, only a few from an uncommonly rich collection. T. B. Haywood, Esq., Woodhatch Lodge, Reigate, showed blooms of the Rose Margaret Haywood, a sport from Clemence Joigneaux, which was obtained three years ago, and is now quite fixed. The blooms are of fine shape and substance, of a soft rosy tint, not unlike that of La France, but resembling its parent in general style. It is of strong habit, free, and a good autumnal Rose. The variety possesses one admirable quality too often almost absent in new Roses—namely, an exquisite and powerful fragrance. A vote of thanks was awarded for it, but it won the National Rose Society's silver medal last year at Reigate.

Mr. J. C. Cowley, Studley House Gardens, Hammersmith, exhibited several Orchids, amongst them being Miltonia vexillaria superba, the flowers small but highly coloured, with a deep maroon blotch at the base of the lip, partly surrounded by a white band, the other portion of the flower being rosy crimson. It is very distinct and evidently free. Plants in flower were also shown of Dendrobium Macarthiæ and Cattleya crocata, the latter having neat white flowers with a deep gold throat to the lip. Votes of thanks were accorded for all these. C. Dorman, Esq., Laurie Park, Sydenham, sent a plant of Epidendrum vitellinum majus with a large spike and fine flowers (vote of thanks), also Anguloa Ruckeri alba (certificated). R. B. Lemon, Esq., Moat Lodge, Beckenham (gardener, Mr. Adams), was adjudged a vote of thanks for Odontoglossum cristatellum, with deep brown sepals and petals, yellowish at the base, not remarkably beautiful, but distinct from most other forms of the same section. Messrs. Sander & Co., St. Albans, again exhibited a plant of Lælia Eyermanniana, a supposed natural hybrid between L. majalis and L. autumnalis; the flowers of a soft rosy mauve colour and possessing some characters of each species, but most of the latter (vote of thanks). Bollea Wendlandiana, with large fleshy yellow flowers and a white column. Messrs. Seger and Tropp, Lordship Lane, East Dulwich, showed Cypripedium Stonei acrosepalum, a variety with long dark sepals and petals, but not distinguishable from many ordinary forms of C. Stonei. Mr. C. Noble, Bagshot, sent a large plant of Spiræa palmata well flowered, and Messrs. Laing and Mather, Kelso, showed a plant of Carnation R. H. Elliot, salmon striped with crimson.

Messrs. W. Paul & Son, Waltham Cross, exhibited several new H.P. Roses, one of which, Duchess of Albany, was certificated; the others were Brilliant, a fine richly coloured crimson buttonhole Rose, and Marchioness of Lorne, rosy crimson, a larger bloom than the latter. Mr. W. Gordon, Twickenham, exhibited flowers of Lilium elegans in several varieties, reddish orange, yellowish, and several intermediate shades; a fine collection of Japanese Irises also came from the same nursery, two being certificated. Mr. T. Smith, Newry, sent a so-called hybrid Lychnis from L. flos-Jovis and L. coronaria, but it was much like the last named. From Mr. A. Scott, Cambridge, came a Lobelia with light blue flowers and yellowish leaves, distinct, but not very beautiful. Messrs. Cannell & Sons, Swanley, showed a collection of flowers of Ivy-leaved Pelargoniums, a primrose-coloured Sunflower, and early pale yellow Chrysanthemum, named L'Ami Conderchet, a white variety of Salvia patens, and several good Pentstemons (vote of thanks). Messrs. Kelway & Sons, Langport, had a large collection of Delphiniums, Gaillardias, Amaryllises, and hardy flowers (bronze medal). Mr. B. R. Cant, Colchester, exhibited six boxes of Rose blooms exceedingly fresh and beautiful, representing most of the best exhibition varieties (silver medal). Messrs. J. Cheal & Sons, Crawley, contributed a collection of single and Pompon Dahlias in many fine varieties, also some Tuberous Begonias and Roses. Most of the former were arranged in Cheal's patent wire flower supports, which are very conveniently constructed for holding flowers in vases, several branches radiating from a central stem, each furnished with a small ring for holding the flower in the required position.

A magnificent group of Ferns was contributed by Messrs. W. & J. Birkenhead, Sale, near Manchester, for which a silver Banksian medal was awarded, but in the opinion of many it merited a higher honour. There were about 1000 plants in over 360 species and varieties, including a choice assortment of both greenhouse and hardy Ferns, furnishing, indeed, one of the most interesting features of the meeting. Of Selaginellas and Adiantums alone sixty species or varieties each were shown, and the twenty forms of Davallias included all the types from the largest to the diminutive D. parvula, like a small Selaginella. The climbing Lygodiums were also admirably represented from tall plants of the comparatively gigantic L. dichotomum, a bold and distinct Fern with large palmate fronds, to the smallest of all, L. microphylla. The delicate and exquisitely beautiful Nothochlænas and Cheilanthes were numerous. There were also many choice forms of Athyrium, Scolopendrium, to which we must refer more fully in another issue. Three were, however, selected for certificates, and are noted below. A silver-gilt Banksian medal was awarded to Messrs. Paul & Son for an extensive and brilliant group of Roses and hardy flowers most effectively arranged, and silver medals were adjudged to Mr. T. S. Ware, Tottenham, for a smaller but similarly choice group of hardy flowers, and to Mr. B. S. Williams, Upper Holloway, for a grand group of Orchids, Ferns, Palms, with valuable or rare stove and greenhouse plants in variety. Messrs. Veitch & Sons had several extensive collections, including a group of Clethra alnifolia

in 48 and 32-sized pots, neat bushes, bearing numbers of long spikes of white flowers; the curious New Zealand Notospartium Carmichælæ with rosy purple Pea-shaped flowers in dense clusters on leafless reed-like stems; a reddish-flowered Yucca named obliqua; Rhododendron flowers, Japanese Irises in numerous fine varieties, and a collection of Carnations and Picotees comprising all the best varieties in cultivation, represented by fine clear handsome blooms. Messrs. E. Collins & Son, Willesden, sent a group of white Carnations and scarlet Pelargoniums; Mr. C. Turner, Slough, a group of Carnations in pots, and Mr. F. Ross, Pendell Court Gardens, brought flowers of Bignonia chirere.

CERTIFICATED PLANTS.

Carnation Elaine (J. Douglas).—A border variety with large pure white substantial and well-formed blooms. A valuable acquisition.

Angulea Ruckeri alba (C. Dorman, Esq.).—A variety with wax-like flowers, pure white except for a few purplish lines in the lip, similar to Ruckeri in form and habit.

Rose Duchess of Albany (W. Paul & Son).—A handsome H.P. variety of the La France type, but much darker in colour; excellent habit, very free, and altogether a capital Rose. We have previously referred to this variety on several occasions.

Saccolabium cæleste (B. S. Williams).—A beautiful species, with short channelled leaves 5 or 6 inches long and 1 inch broad. The flowers small, in compact erect racemes 6 inches long, the sepals and petals white tinged and tipped with purple, the lip bluish purple.

Rhododendron Purity (J. Veitch & Sons).—One of the greenhouse hybrid section obtained from a cross between R. Taylori and R. Teysmanni, and of several seedlings flowered from the same cross this is the only one that has white flowers. The corollas are large with broad rounded lobes and pure white, a decided advance, as most others hitherto obtained have had a slight tinge of colour. It is interesting also as being obtained from parents with rosy crimson and orange coloured flowers.

Oreocome Candollei (C. Noble).—A hardy herbaceous umbelliferous plant 4 or 5 feet high, with large much-divided leaves and large umbels of light coloured flowers. The foliage is its chief attraction.

Stuartia pseudo-Camellia (J. Veitch & Sons).—A Japanese shrub included in the Camellia family, having narrow lanceolate leaves and large white flowers of five broad rounded silky petals slightly frayed at the margin, and having a dense cluster of stamens bearing yellow anthers in the centre.

Rose Paul's Cheshunt Scarlet (Paul & Son).—Exhibited as a decorative variety, described as very free in growth and flowering, the colour a brilliant crimson scarlet, suggestive both in form and colour of Général Jacqueminot.

Lælia Amesiana (Baron Schröder).—One of the C. Mendeli type, with blush sepals and petals, the lip broad and fringed, the basal half pure white, the apical portion deep rich crimson. The flower is well formed, and the colour boldly marked.

Iris Kæmpferi Kaiser Wilhelm (W. Gordon).—One of the beautiful Japanese Irises with broad equal divisions, white, streaked with purple.

Iris Kæmpferi Enterprise (W. Gordon).—Similar to the above, except that the flowers are more deeply streaked with purple.

Scolopendrium cristulatum (W. & J. Birkenhead).—One of the crested forms of Hart's Tongue Ferns, dwarf and compact in habit, the cristation regular and pretty.

Lastrea montana ramo-coronans (W. & J. Birkenhead).—Another elegant crested Fern, both the pinnæ and the tips of the fronds being neatly tufted or divided.

Nothochlæna Mulleri (W. & J. Birkenhead).—Very distinct, the fronds pinnate, 8 to 9 inches long, the pinnæ oval, green, partially covered with brownish scales, the under surface densely covered in the same way. The young fronds have a whitish appearance.

COUNCIL AND GENERAL MEETING.—A report was read from the Chiswick Committee concerning the National Apple and Pear Conference to be held at Chiswick Gardens from the 11th to the 18th October, and a schedule, which may be had from Mr. Barron, was drawn up and agreed to. It was resolved that the Secretary have a proof of the new by-laws printed and circulated amongst the members of the Council and the Fellows' Committee, and that a meeting be called by Mr. Deal to consider the corrections and alterations.

At a General Meeting of the Society, held in the Council Room, 111, Victoria Street, S.W., Robert Hogg, Esq., LL.D., F.L.S., Vice-President, in the chair, the following candidates were duly elected Fellows—viz., Louis E. Anlagnier, W. Handel Cannon, Richardson Evans, Geo. Garside, jun., Maurice Holtze, Francis P. Pascoe, James Seeger, and Thomas E. K. Shield.

BLUE GUM TREES.

IT is not often that we see the Blue Gum of Australia (Eucalyptus globulus) in a luxuriant condition in this country after being planted out for more than one season, our winters usually killing them; but in the garden of the Rev. C. L. Acland of Colchester there is one now about 10 feet in height, with most luxuriant foliage. It has been planted out three years and flowered last year. We believe Mr. A. Smee, who is a great lover of this plant, has to renew his every year. Mr. Smee's plants are in front of his windows to prevent the flies entering his rooms. They do not like the aroma.

A great feature in the Rev. Mr. Acland's flower garden is that a bed is devoted to Acanthus, another to Bamboos, another to Polygonum, Aralias, &c. No strict old-fashioned bedding-out system is adhered to, while wherever it is possible ornamental Grasses are sown thinly, these drooping over Saxifragas, Sedums, &c., out of flower, give an airy effect which might be well copied. With the exception of few there is no need to renew every year.—F. H.

RHODODENDRON COLLETTIANUM.

THIS is the proper name of the shrub represented in the accompanying woodcut, and which was distributed under the name of R. afghanicum, the latter, however, being a new and distinct species from the same region. It is said to be poisonous, and differs from the subject of our note by its campanulated corolla and long exserted bent style. In R. Collettianum the style is very short, the flowers in medium-sized bunches of 8 to 12 or more, white tinged rose. In a note Dr. Aitchison says, "In most of its characters it closely approaches R. anthopogon, from which it differs in its large stature, large straight flowers, and in the tube of the corolla being hairy all down the inside." It reaches 10,000 to nearly 13,000 feet above sea level at Shéndtoi to the ridges of Sikarám, commencing at near the limit of trees, and mixed



FIG. 8.—RHODODENDRON COLLETTIANUM.

with masses of Junipers, forming large thickets. It has proved perfectly hardy and flowered for the first time in the rockery at Kew, where it has been planted out since 1886. For rockeries, or where dwarf shrubs are required in the border, this will be found a valuable acquisition. It will be found very useful for hybridising purposes, possibly giving its dwarf habit and hardy nature to some of the better flowered sorts.—D.

THE NATIONAL CARNATION AND PICOTEE SOCIETY.

JULY 24TH.

As most growers expected, the Metropolitan Show, held on Tuesday last in the Drill Hall, James Street, Westminster, was much smaller than usual, for the simple reason that few had been able to get their blooms sufficiently out for exhibition. Good blooms were, however, included in the leading stands, though there were many irregular specimens amongst the second and third prize blooms. Only one certificate was awarded, and this was adjudged for one of Mr. Douglas's seedlings light purple-edged Picotee named Silvia, of good substance, clean petals, and with a well defined edge.

CARNATIONS.

Class A, twenty-four blooms, not less than twelve dissimilar varieties.—Two only were in competition in this the most important class, a result that can hardly be considered satisfactory in face of the fact that

five prizes value 50s., 40s., 30s., 20s., and 10s. respectively were offered. The contestants were those old opponents, Messrs. C. Turner, Royal Nurseries, Slough, and James Douglas, gardener to F. Whitbourn, Esq., Great Gearies, Ilford. Many stubborn battles have been fought between these famous growers of florists' flowers with varying results. On the present occasion victory rested with the trade grower, and he was unquestionably several points ahead of his opponent. Mr. Turner showed the following varieties, the names being read from left to right: —Back row—Sarah Payne, Mars, H. K. Major, Juno, E. S. Dodwell, H. K. Major, and Sybil. Middle row—John Keat, James Taylor, James Mackintosh, Mrs. Brown, Henry Cannell, Jessica, James Macintosh, and Mrs. Power. Front row—Mayor of Nottingham, Wm. Skirving, John Keat, Sir G. Wolseley, Mrs. Power, Prince George of Wales, Wm. Skirving, and Clipper. Considering the late and trying season this stand was of great excellence, and several of the blooms were of a very high order, Juno, for instance; Sarah Payne, Jas. Mackintosh, and Clipper were also beautiful examples. Mr. Douglas staged the following: —Back row—Jas. Douglas (2), Sybil (2), Matador, Squire Potts, a most beautiful bloom, one of the best in the Show, and two seedlings. Middle row—James Merryweather (sport), Sportsman, Thalia (2), Florence Nightingale, and two seedlings. Front row—Matador, Admiral Curzon, Henry Cannell, Jas. Merryweather, Florence Nightingale, and three seedlings.

Class B, twelve blooms, dissimilar.—In this class again there were but two competitors, the first prize falling to Mr. Douglas, and the second to Mr. H. W. Headland, The Firs, High Street, Leyton. The first named staged the following—Back row: James Douglas, an even and highly coloured bloom; Sybil, larger, bright and good; Mrs. Gorton, and Thalia. Middle row: a pink and purple seedling, Matador, Florence Nightingale, and John Bull, a fresh, smooth, and bright flower. Front row: Sportsman, Admiral Curzon (well coloured), Duc d'Aumale, and a seedling. Generally considered, the stand was of good average excellence. Mr. H. W. Headland is not perhaps an experienced exhibitor, and he will doubtless on future occasions avoid the error of using cards or collars so large and obtrusive as to spoil the effect of some of his finest blooms. Good flowers do not need such ornamentation as was here provided in the form of very large frilled collars. The flowers were of excellent quality, and of the twelve varieties shown—namely, William Skirving, Diana, Harrison Weir, Miss Gorton, Thalia, Sarah Payne, Sybil, Fred, Sportsman, James Douglas, Florence Nightingale, and Matador, the first, sixth, seventh, and tenth named were exceptionally fine. Sybil was splendid; it was a very large, symmetrical, bright bloom, and undoubtedly one of the best in the Show.

Class C, six blooms, dissimilar, six prizes.—This brought four competitors, but only one stand approached the average in point of quality. This was the collection of Mr. C. Phillips, Hamilton Road, Reading, who secured an easy victory. The varieties shown were Tom Power, Wm. Skirving, Thalia, Jas. Douglas, J. D. Hextall, and Mrs. W. H. May. Mr. C. Henwood, also from Hamilton Road, Reading, was placed second, but two blooms only in his stand were up to the mark—namely, Wm. Skirving and Jas. Douglas. Mr. W. Rowan, 36, Manor Street, Clapham, was third, and Mr. A. Startup, 3, Stanley Road, Bromley, Kent, fourth.

Class D, single specimens of Scarlet Bizarres, Crimson Bizarres, Pink Bizarres, Purple Flakes, Scarlet Flakes, and Rose Flakes, five prizes in each class.—A very large number of blooms was shown in these classes. *Scarlet Bizarres.*—Mr. Douglas was first and fourth with Admiral Curzon, Mr. Turner second with Jas. Mackintosh, Mr. Headland third with Arthur Medhurst, and Mr. Headland fifth with Fred. *Crimson Bizarres.*—Mr. Douglas was first and second with Wm. Hewett, Mr. Headland third with Mrs. Whitbourn, Mr. Phillips fourth with Wm. Wardill, and Mr. Startup fifth with J. D. Hextall. *Pink Bizarres.*—Mr. Turner was first and third with H. K. Major, Mr. Douglas second with Isaac Scott, and fourth with Mrs. Gorton, and Mr. Headland fifth with Harrison Weir. *Purple Flakes.*—Mr. Douglas was first and second with his namesake, Mr. Turner third and fourth with Juno, and Mr. Rowan fifth with Jas. Douglas. In the *Scarlet Flakes* Mr. Douglas was first with Matador and second with Sportsman, Mr. Headland third with Sportsman, and Mr. Rowan fourth and fifth with Clipper. *Rose Flakes.*—Mr. Douglas was first and second with Sybil, Mr. Turner third and fifth with John Keat, and Mr. Phillips fourth with Thalia.

The prize for the premier Carnation in the Exhibition was awarded to Mr. C. Phillips, the variety being Tom Power, shown in his first prize stand of twelve in Class C. It was a large, well formed and very bright bloom, the colours being exceedingly clear.

PICOTEES.

Class E, twenty-four blooms, not less than twelve dissimilar varieties. Five prizes, 50s., 40s., 30s., 20s., 10s.—In this class, as in the corresponding one for Carnations, there were only two exhibitors, Messrs. Douglas and Turner. Their positions were, however, reversed, the Ilford exhibitor securing a ready victory. The following varieties were shown:—Back row—Her Majesty (2), very fine indeed; Liddington's Favourite (2), John Smith, and three seedlings. Middle row—Mrs. Sharpe (2), very bright and fresh; Miss Rudd, and five seedlings. Front row—Princess of Wales (2), Constance Heron, Muriel, Brunette, and three seedlings. Mr. Turner showed the following: Back row—Juliette (2), Liddington's Favourite, Rival Purple (2), Mrs. Nicholay, Her Majesty, and Princess Dagmar. Middle row—Robert Scott, Her Majesty, Mrs. Hanbury, Louisa, Dr. Abercrombie, Emily, Picco, and Miss Horner. Front row—Miss Horne, Picco, Emily, Lucy (2), Louisa, Mrs. Gibbons, and Dr. Abercrombie. Mr. Douglas's many seedlings included several promising varieties, a heavy purple edge and light purple edge being both worthy of names.

Class F, twelve blooms, dissimilar; five prizes, 40s., 30s., 20s., 15s., 10s.—This class again was a repetition of the corresponding one for Carnations, Messrs. Douglas and Headland being the only exhibitors, and being placed first and second in the order their names are given. Mr. Douglas showed the following varieties: Her Majesty, Liddington's Favourite, Mrs. Sharpe, Brunette, Constance Heron, Princess of Wales, Miss Rudd, Muriel, and four seedlings. These were all exceedingly bright and fresh, and formed a collection of considerable merit. Mr. Headland showed Clara Penson, Triumph, Zerlina, Liddington's Favourite, Lady Holmesdale, Princess of Wales, Ethel, Her Majesty, Muriel, and several seedlings.

Class G, six blooms, dissimilar; five prizes.—This brought out three stands, Mr. C. Phillips winning the first prize with Juliette, Favourite, Mrs. Payne, Picco, Her Majesty, and Mrs. Dodwell. They were neat and fresh, but do not otherwise call for comment. Mr. Rowan followed with neat examples of Clara Penson, Master Norman, Emily, Her Majesty, Countess of Wilton, and Favourite. Mr. Startup was third.

Class H, single specimens.—Red, heavy-edged; red, light-edged; purple, heavy-edged; purple, light-edged; rose or scarlet, heavy-edged; rose or scarlet, light-edged, and yellow ground. One class, five prizes in each class. *Red, heavy-edge.*—Mr. Douglas was first and second with Princess of Wales, Mr. Headland third with Mrs. Robertson, and fourth with Brunette, and Mr. Phillips fifth with Mrs. Dodwell. *Red, light-edge.*—Mr. Douglas first with Violet Douglas, Mr. Turner second with Emily, Mr. Headland third with Emily and fourth with a seedling, and Mr. Startup fifth with Violet Douglas. The purple heavy-edge class found Mr. Douglas first and second with Muriel, Mr. Headland third with Muriel and fourth with Zerlina, and Mr. Turner fifth with Rival Purple. *Light-edged purple.*—Mr. Douglas was again first and second with seedlings, Mr. Headland third and fourth with Clara Penson, and Mr. Phillips fifth with Her Majesty. *Rose or scarlet, heavy-edge.*—Mr. Douglas was first with Constance Heron and second with Lady Holmesdale, Mr. Headland third and fourth with the same varieties, and Mr. Phillips fifth with Mrs. Payne. In the *light rose and scarlet-edges* Mr. Douglas was first with Liddington's Favourite and fourth with Miss Flowdy, Mr. Turner second with Lucy, and Mr. Phillips third and fifth with Liddington's Favourite. *Yellow grounds.*—Mr. Douglas was first and fourth with Agnes Chambers, Mr. Turner second and third with Annie Douglas, and Mr. Headland fifth with a seedling.

The premier Picotee in the Show was Muriel in Mr. Douglas's first-prize stand of twenty-four, It was a splendid bloom, the body colour being clear, the edge well defined, and the flower evenly formed.

MISCELLANEOUS: SELFS, FANCIES, OR YELLOW GROUNDS.

Class I, twenty-four blooms, not less than twelve dissimilar varieties; six prizes, 40s., 30s., 25s., 20s., 15s., 10s.—This class brought three exhibitors, and was a highly attractive one. A beautiful stand from Mr. Turner secured the first prize, the blooms being delightfully fresh. The following varieties were shown—Back row: Annie Douglas (2), Mrs. Reynolds Hole, Almira, and Purple Emperor (2). Second row: Colonial Beauty, Agnes Chambers, Dorothy, Almira, Terra Cotta, and a seedling. Third row: Ellen Burrows, Mrs. Maclaren, Dorothy, Sybil, Agnes Chambers, and a seedling. Front row: Purple Emperor, The Bride (2), Amber, Terra Cotta, and Mrs. Maclaren. Mrs. Douglas was a capital second. Janira, Annie Douglas, Almira, Elaine, and others were very fine. The third prize was awarded to Mr. W. Toby, 3, St. Mark's Grove, Fulham Road, London, S.W., whose blooms were very neat, if somewhat small.

Class K, twelve blooms, dissimilar. Six prizes, 25s, 20s., 15s., 10s. 7s. 6d., 5s. Mr. Sanders, gardener to Viscountess Chewton, Bookham Lodge, Cobham, and Mr. W. Startup were the only exhibitors in this class. The former won easily, his opponent being very weak. Mr. Sanders showed the Crimson Clove, a sport from Jas. Douglas, very poor; A. Alegatière; Mary Morris, fair; Irma, Jean Sisley, Miss Jolliffe, very small, a sport from Mrs. Maclaren, Pride of Penshurst, and three seedlings.

Class 12, yellow ground Picotees, not less than six to be dissimilar. Four prizes, 30s., 20s., 15s., 10s. Messrs. Turner and Douglas once more had the field to themselves in this class, the latter receiving the chief award. He exhibited a fine lot of blooms, Mr. Turner not being very far in the rear.

Class M, twelve specimens, dissimilar (from any or all of the classes, including Tree Carnations) in bloom, in pots not exceeding 8½ inches in diameter; three prizes. Three lots were staged in this class, Mr. Turner adding to his previous successes by securing the first prize. He showed fine healthy well flowered plants of Pride of Penshurst, Amber, Agnes Chambers, Mrs. Maclaren, Terra Cotta, Annie Douglas, Colonial Beauty, Prince of Orange, Howard's Yellow, Dorothy, Almira, and Purple Emperor. Mr. Douglas was a good second, and Mr. Headland a moderate third.

In the afternoon a lunch was held at the "Hotel Windsor," Mr. Thiselton Dyer presiding, with Mr. Shirley Hibberd in the vice-chair, and there was a good attendance of members of the Society.

PEACHES AND NECTARINES OUT OF DOORS.—These are rapidly recovering from the effects of cold winds and other checks. The fruit, however, is bound to be late in ripening, and unless there is plenty of sunshine in August much of the late growth will not ripen at all. The aim

therefore, should be to assist both as much as possible, and this can best be done by freely thinning the young growth, only laying in enough to furnish the trees with bearing wood next season. The growths being thus thinly trained will have the full benefit of sunshine and light, and the fruit will be similarly benefited. Those trees that have reached the top of the walls are apt to form most wood just under the coping, and the greater portion of this ought to be removed, only a few leaves being reserved beyond any fruit there may be. Light crops are the rule, but where there are exceptions continue to thin freely, as the fruit on overcropped trees is rarely of the best. Overcropping also materially shortens the lives of trees. One good fruit to every 8 square inches of tree surface is ample in the case of Peaches, but the Nectarines may be left rather more thickly. Remove all nails pressing against the fruit before the latter are spoilt.—W. I.

GARDENING LITERATURE PAST AND PRESENT.

[A paper by Mr. W. K. Woodcock, The Gardens, Oakbrook, Sheffield, read before the Walkley Amateur Floral and Horticultural Society, June 15th, 1888.]

It has been said that we may judge the moral and material character of a people by the nature of its literature; and if this be true of a nation so also I believe is it true of a profession, science, or art. Either of the latter possessing no literature of its own, or only such as is of a very poor character, is decided in an unsatisfactory condition, Gardening, however, is certainly not defective upon these grounds. Probably no other profession possesses a literature so ancient, so varied, or so generally useful, and which during the past twenty years has been so greatly extended and improved. Passing the scriptural references to gardens and the writings of the earliest authors we come to Pliny, a Roman author, who at the commencement of the Christian era, and at the time when the Roman Empire was in the zenith of its power and affluence wrote at great length concerning the gardens of the Romans. The wealthy nobles appear to have spent vast sums of money in the cultivation of flowers, and especially of Roses, which were used by them in such lavish profusion that as much as four million sesterces, or about £30,000, have been expended on them for a single banquet.

After the fall of the Roman Empire for a period of nearly five centuries there existed a state of semi-barbarity which is now commonly known as the "Dark Ages," and during which scarcely any books were written except upon religious matters, and these by the monks. The first book which appeared upon rural and gardening matters was by Crescenzia in Italy early in the fifteenth century. None, however, appeared in Britain until that of Fitzherbert, which was published about the middle of the sixteenth century. The late Mr. G. W. Johnson in his "History of Gardening" tells us that the author of the first book on gardening in England was Watton de Honley in the reign of Edward III. Towards the end of the sixteenth century several authors of works on gardening and husbandry had appeared, among whom were Tusser, Mountain, Mascal, and Hyll, most of whom wrote on the subject partly from their own experience and partly by translating from Latin and Greek authors.

One of the earliest books of value was "The Gardeners' Labyrinth," published by Didymus Mountain in 1571. This book was professedly a compilation of extracts on gardening topics from various other works. A second part of this work was published in 1577, and other editions followed. During the seventeenth century garden literature grew apace. Many of the writers of this period were practical gardeners who wrote from their own experience. Amongst the principal names of writers were Plat, Lawson, Gardener, Standish, Parkinson, Plattes, Austin, Tradescant, Evelyn, Conley, Blake, Rea, Worledge, Meager, Temple, and others. Parkinson published a work entitled "Paradisus," or "Garden of Pleasant Flowers," in which he gives lists of flowers, fruits, and vegetables then cultivated. In his list of flowering plants he enumerates 137 sorts of Tulips, 95 of Narcissus and Daffodils, 50 Hyacinths, 31 Crocus, 73 Irises, 67 Anemones, 23 Ranunculuses, 9 Geraniums, 22 Auriculas, 21 Polyanthuses and Cowslips, 52 Carnations and Gilliflowers, 20 Pinks, 24 Roses, and smaller numbers of varieties of other flowers. In 1653 appeared a treatise of fruit trees by Ralph Austen, which is said to be a good book and containing much sound information upon the subject. A book entitled "Adam out of Eden" was published by Adam Speed in 1659. In it he says, "There are those about London that make £200 an acre by gardening." Samuel Hartlib in his work a "Legacy of Husbandry," published in 1655, says Gardening is but of a few years' standing in England, and therefore is not well understood; and that a Surrey landlord feared the gardeners would spoil his ground by digging. Probably the best writer of the century was John Evelyn, F.R.S., a highly cultured and educated gentleman, born at Wootton in Surrey, and educated at Oxford. His principal works were "The French Gardener," a translation; "Fumifugium," or the inconvenience of the air and smoke of London. This work was dedicated to His Majesty Charles II., and published by his command; "Sylva, or a Discourse about Forest Trees," with an appendix on fruit trees; "Kalendarium Hortense," a monthly calendar of operations; "Terra," a discourse on the culture and improvement of the earth for vegetation and the propagation of plants; and "Pomona," a discourse on cider Apples. Very numerous were the writers on these topics in the next or eighteenth century, prominent amongst whom were London and Wise, Collins, Switzer, Fairchild, Miller, Abercrombie, Forsyth, Hitt, Wheeler, Repton, Whatcley, and Nicol.

Probably the one whose works are most known and read even up to the present date is Abercrombie. He was a thoroughly practical gardener, who having left his parents when some fifteen years of age, came to London, and after a time obtained employment in Kew Gardens, afterwards, at different periods, living as gardener with several noblemen, and following that, again, as a nurseryman at Hackney. He wrote fifteen or sixteen different books in his time, but undoubtedly the one which was most profitable to himself and to its readers was "Every Man His Own Gardener." I should not omit mention of the name of Mr. T. A. Knight, who was a very eminent pomologist and a voluminous writer. I was looking down a list the other day of the essays he had written, and found them to number no less than 107, chiefly relating to fruit culture. In the early portion of the present century garden literature made great strides, and very many new writers appeared, principal amongst whom were Mr. Joseph Sabine, Secretary to the Horticultural Society, who wrote numerous works on a great variety of subjects. William Salisbury wrote a work entitled "Hints to Proprietors of Orchards," which was much thought of. Henry Andrews, in 1802, published several useful works on "Heaths Illustrated," with coloured engravings. Walter Nicol also wrote about the same time a series of useful books, and he was followed closely by William Pontey, forester to the Duke of Bedford, who wrote "Rural Recreations, or the Gardener's Instructor," 1802; "The Forest Pruner," 1808; "The Profitable Planter," 1809; and the "Rural Improver," 1823; all practical works, which had a large circulation.

Sir Joseph Banks, President of the Royal Society, one of the most learned scientists our country has produced, about this time wrote a number of papers or pamphlets on gardening topics, all of them very valuable contributions, the principal and more important amongst them being, "An Attempt to Ascertain the Time when the Potato was First Introduced into this Country, with Some Account of the Hill Wheat in India," "Hints Respecting Inuring Tender Plants to Our Climate," "On Ripening the Second Crop of Figs that Grow on the New Shoots," and "Notes Relating to the First Appearance of the Aphis lanigera, or the Apple Tree Insect, in this Country." The greatest of all the gardening authors, however, who wrote in the early part of the present century, was undoubtedly Mr. J. C. Loudon, to whose valuable Encyclopædia on gardening I am indebted for many of the names and dates given in this paper. He was by profession a landscape gardener, and was born in Lanarkshire in 1782, commencing practice in his profession in 1803. In 1810 he was an extensive farmer in Oxfordshire and Middlesex. In 1813, 1814, and 1815 he had given up farming and was travelling on the Continent, and in 1820 he had settled down in Bayswater, London, practising occasionally his profession of landscapist, but occupying his time principally as an author. One of the most important and valuable contributions to gardening literature ever penned was his "Encyclopædia of Gardening," mentioned above. The first edition was published in 1822, and the fifth in 1827. It is an extraordinary book of nearly 1500 pages octavo, and very closely printed. It is written in a clear and pleasant style, is profusely illustrated with wood engravings, and deals in an exhaustive manner with every branch of gardening. He also published an Encyclopædia of Plants, and another of Agriculture, works similar in character and construction to the one on gardening. Another large work published by him was "Hortus Britannicus, a Catalogue of all the Plants Cultivated in, or Introduced to Britain," but the largest and most costly of all the works he undertook was "The Arboretum et Fruticetum Britannicum," generally called "The Arboretum," in eight octavo volumes, profusely illustrated. It is said to have cost £20,000 in bringing out. In addition to large sums he had paid in ready money during its progress to artists and others employed in its production, he found at its conclusion that he owed £10,000 to the printer, stationer, and wood engraver who had been employed on the work. He wrote several important works upon the theory and practice of landscape gardening, and also upon the construction of hothouses. He was also Editor of "The Gardeners' Magazine," and "The Magazine of Natural History." His wife was a very accomplished and clever writer, and wrote numerous gardening works especially for ladies, one of which "The Ladies' Flower Garden," a beautifully illustrated work in six quarto volumes, is still in much request.

About 1820 the Transactions of the London Horticultural Society (which had been established in 1804, and received a Royal Charter in 1809) were annually published, and began to attract some notice on account of the excellence of some of the papers contained, and which proved a valuable contribution to garden literature. Other writers of this period were Griffin, Haynes, Hooker, Curling, Hogg, Lyon, Emmerton, Mean, and Brookshaw. Robert Sweet was also a writer of some valuable and useful works, as "The Botanical Cultivator" (1820), "The Hortus Britannicus" (1826), "The Geraniaceæ" (1830), "The Cistineæ" (1830), "The British Flower Garden," "Flora Australasica" (1828), and "The Florists' Guide" (1832). Henry Philips, who wrote between 1820 and 1833, also published numerous useful works. "The Floricultural Cabinet," a monthly illustrated gardening periodical, was commenced by Harrison in 1833 and was carried on for twenty-seven years. Loddiges, nurseryman of Hackney, whose nursery at that time occupied a leading position, began to publish "The Botanical Cabinet" (a very high class work) in 1817, and which stopped in 1833. It contains coloured plates of 2000 plants. "The Botanical Register," also a high class periodical, commenced in 1815, and stopped in 1847 with the thirty-third volume. The later volumes of this work were edited by Dr. Lindley. "The Horticultural Register," edited jointly by Paxton and Harrison, began in 1832, and extended to six volumes only, and "The Floricultural Cabinet," by Robert Marnock, commenced in 1836,

extended to the same number. "The Magazine of Botany," edited by Paxton, began in 1834, and had a fairly successful run extending to fifteen volumes. About this time George Glenny commenced "The Gardeners' Gazette" and "The Horticultural Journal." He also wrote numerous treatises and papers on florists' flowers.

"The Pomological Magazine" was commenced in 1827, is now sold as a complete work in three volumes, and contains coloured plates of many of our best fruits. "The Florist and Pomologist" was commenced by Edward Beck in 1848 and closed in 1882. It was for a long time a very popular illustrated monthly journal, chiefly valued for the excellent and faithful coloured representations it contained of fruits and flowers. In 1829 Mr. G. W. Johnson published a very valuable work, entitled "The History of Gardening," containing much information. McIntosh's "Practical Gardener," published in 1828, is another very useful work, as also is "The Book of the Garden," by the same author (1853). Paxton's "Gardeners' Dictionary," published about 1840, is a useful work, especially the revised edition of the same, with supplement. "The Cottage Gardeners' Dictionary," by Mr. George W. Johnson, first published about 1850, revised and re-issued subsequently, with a supplement including all the new plants and varieties to the end of the year 1880, by N. E. Brown, is a comprehensive and useful work, answering fully all the purposes required of a dictionary of this kind. Thompson's "Gardeners' Assistant," first published in 1859 by Robert Thompson of the Royal Horticultural Society's Gardens, Chiswick, is one of the most practical and reliable standard works ever written upon the subjects it treats upon, has been within the past few years revised and much extended by the late Mr. Thos. Moore of Chelsea Botanic Gardens. Other useful works published about the same dates are "The Culture of the Apple and Pear," by T. A. Knight; "The Miniature Fruit Garden," by Thos. Rivers; "The Gardeners' Calendar," by T. Mawe; "A Treatise on the Vine," by J. Meredith; and by George Glenny, "Handy Book on Gardening and Golden Rules for Gardeners."

I must now treat shortly upon works by authors now living, and which are very numerous and valuable. First, then, I would mention the "Fruit Manual," by Dr. Robert Hogg, which is undoubtedly the best work upon fruits ever written in the English language. Mr. Shirley Hibberd has been a very industrious and varied writer, and has contributed many useful books, foremost amongst which are Hibberd's "Amateur's Flower Garden," "Amateur's Greenhouse and Conservatory," "Amateur's Kitchen Garden," "Amateur's Rose Garden," "The Fern Garden," "Profitable Gardening," "The Town Garden," and "Water for Nothing." The Very Rev. Dean Hole has contributed two extremely interesting and practical works, entitled, "A Book about Roses: How to Grow and Show Them," and "The Six of Spades," both of which are very enjoyable reading. Mr. William Robinson is the author of numerous works, the best of which are "Alpine Flowers for English Gardens," "Mushroom Culture," and the "Wild Garden." To those interested in market gardening, a little work entitled "The London Market Garden," by C. W. Shaw, is full of useful information.

"Florists' Flowers," by J. Douglas, Great Gearies, Ilford, is the most practical work extant upon this subject, the writer being well known in the horticultural world as one of the most successful cultivators. A work has been issued by Messrs. Sutton & Son, of Reading, entitled, "The Culture of Vegetables and Flowers from Seeds and Roots," which is full of useful information. The same firm has just published what will doubtless prove a very successful little book of sixty-eight pages, entitled, "The Art of Preparing Vegetables for Table."

Mr. B. S. Williams, of the Victoria and Paradise Nurseries, Upper Holloway, London, is well known as being the author of several cheap and practical works; first amongst which is "The Orchid Grower's Manual," of which the sixth edition is now being sold, and which has grown in size and cost with each fresh edition issued. The first edition published in 1853 contained names and descriptions of 260 species and varieties of Orchids. The sixth edition contains names, &c., of 1470. The edition now being sold is a bulky volume of 650 pages, profusely illustrated. Other useful books by the same author are "Choice Stove and Greenhouse Flowering Plants," now in its third edition much enlarged; "Select Ferns and Lycopods, British and Exotic," "Choice Stove and Greenhouse Ornamental-leaved Plants," and last, but not least, the 'Orchid Growers' Album," now, and since July, 1881, being published in monthly parts, and for the general excellence of character of which Mr. Williams has just had a gold medal awarded to him at Ghent, Belgium. Messrs. Sander of St. Albans, and Veitch of Chelsea, are each publishing expensive illustrated works on Orchids.

Mr. Lewis Castle, of the *Journal of Horticulture* is the author of several small and cheap, but very useful works to the gardener, principal amongst which are "Orchids, their Structure, History, and Culture," "Cactaceous Plants," and the "Chrysanthemum Annual." A remarkable feature of each is the large amount of information compressed into a small space. Mr. J. Wright, from the same office, has, as is well known, published a little work upon outdoor Mushroom culture, which has gone through four or five editions and become immensely popular. It is, in my opinion, a model of what such a work should be—clear, very concise, written in plain homely language, which none can fail to understand, and published at a price which makes it accessible to all. Coming under a like category is "Rose Growing for Beginners," written and published by my townsman, Mr. Duncan Gilmour, jun. I believe this little book, which is written much upon the same lines as is Wright's "Mushrooms," will have a large sale. Mr. Gilmour, like Dean Hole, has a happy knack of interspersing his more serious facts with quaint and racy remarks, which tend to interest the reader, and to keep him in a good humour alike with himself and with the author.

With regard to the gardening periodicals of the present day I may briefly state that while they are much more numerous than at any former period, the quality has, I believe, in no way deteriorated. A strong proof of the much greater interest taken in gardening pursuits now than formerly by amateur and cottage gardeners is in the fact that no less than four cheap weekly papers have, within about that number of years, sprung into existence. I would not wish to draw invidious comparisons as to the relative merits of these "papers," but must be content to say that as each has, and maintains, its own individuality of character, so each appeals to and obtains the patronage of a somewhat different class of readers.

After some remarks upon the trade catalogues of the present time Mr. Woodcock continued:—

I must now draw my paper to a conclusion, although I am most fully aware there are numbers of good authors and useful books which I have failed to notice. Sufficient, however, has been said, I hope, to prove that our craft has no need to be ashamed either as regards the quantity or quality of its literature. It is a very well known maxim that "demand creates supply," and as during late years the latter has so greatly increased, so also has the former. A spirit of research and inquiry is abroad. Everyone who wishes to keep abreast of the times now reads for himself, whereas within the comparatively short space over which my memory extends, good gardeners were to be met with in plenty who proudly averred that they never read gardening papers or books, and cared naught for that kind of teaching. The great change in this respect augurs well for the future of English gardening, which is, I believe, destined to take a much higher rank in British industries than it has as yet done. I believe that not only will gardens prosper, multiply and extend, and be rendered increasingly productive, but that as the cultivation on farms has professedly become unremunerative, gardening will be called upon more and more to play an important part in agriculture. It therefore behoves us each to avail ourselves of the opportunities at our command by attending such meetings as this, and by perusal of the best literature available, to fit ourselves, as far as we may, for whatever may be required of us.

HIGHGATE SHOW.

JULY 19TH.

THE Highgate Horticultural Society is doing good work in a large northern district of the metropolitan suburbs, and that the wealthy and influential residents in the neighbourhood fully appreciate this is shown by the ample support accorded. Last year the Committee succeeded in clearing off a deficit of £50, and this year a considerable reduction has been effected in the working expenses, which should have a correspondingly good effect in the balance at the end of the season. An active energetic Secretary, Mr. D. B. Crane, has now undertaken to pilot the Society, and there is every probability that the Show will grow in importance. The gardeners' classes constitute the principal portion of the Show, but more exhibitors are wanted, for three or four competitors now appear to share the prizes between them. In the cottagers' classes competition was, however, very keen, and the general quality of the exhibits most praiseworthy. The Baroness Burdett-Coutts and several other supporters of the Society give much encouragement to exhibitors in this department by means of special prizes for vegetables, fruit, and plants.

The President, Colonel Stedall, gave permission for the Show to be held in the Priory grounds, and upon the slope of a hill facing the Highgate Woods two large tents were erected, each of which was filled with competing exhibits and beautiful groups of plants from Mr. B. S. Williams, Upper Holloway, and Messrs. J. Cutbush & Sons, Highgate. Groups of plants arranged for effect were numerous, and some were tasteful, but too many examples of crowding were noticeable. Mr. J. Brittain, gardener to F. Reckitt, Esq., Caenwood Towers, and Mr. H. Eason, gardener to B. Noakes, Esq., Northhill, were respectively first and second in one class, while in another, for which the President provided the prizes, Mr. J. Brooks, gardener to W. Reynolds, Esq., The Grove, was the most successful exhibitor, followed by Messrs. Brittain and Eason. These three exhibitors won the chief prizes for stove and greenhouse plants, Orchids, Cockscombs, Balsams, Fuchsias, and Gloxinias, Mr. Brooks taking a large share of the honours. Mr. Brittain was first with six fine Ferns, and Mr. Eason with the same number of fine-foliage plants, Mr. Eason staging the best single specimen, a large example of Maxillaria tenuifolia, over 3 feet in diameter. Mr. G. Agate, gardener to H. Taylor, Esq., New Southgate, was first with well-grown Tuberous Begonias, and he gained a similar place with four Fuchsias, Mr. C. Shepherd, gardener to C. S. Duval, Esq., South Grove, taking the lead with Pelargoniums.

Cut flowers, stands of flowers, bouquets, &c., were fairly represented, Messrs. W. Brooks, W. Pink, Brittain, Agate, Calvert, and Shepherd securing the chief places. Fruit also from Messrs. Brittain, Agate, Calvert, Shepherd, and Brooks occupied a considerable space.

SUMMER-FLOWERING HEATHS.

ALL those having Ericas standing in the open should endeavour to give them some protection from heavy and continual rains. More especially is this necessary where the plants are placed upon a wet or undrained bottom. Where shelter cannot be given in this temporary

situation let them he removed to frames or to their winter quarters; the former is preferable where the accommodation can he given. Here they should have a cool hottom to stand upon, for we have frequently seen Heaths, more especially the softer-growing kinds, go quite blind (that is, lose all the flower) through being suddenly removed from a cool standing place to an open greenhouse stage. Wherever they are placed, however, all the air possible must he given. Look carefully to the watering; see that none are only half watered, as this is a fertile source of mildew. Should this pest put in appearance dust the plants affected with sulphur; use it carefully, hecause it does not improve the appearance of the plants, and the less waste the better.

Some of the most distinct Heaths now flowering are the following, but several of these are too seldom seen in gardens at the present time though they can be still found in a few collections of hardwooded plants:—

Erica Uhria pilosa.—An extremely showy plant. Leaves arranged in threes, linear, and densely clothed with ciliated hairs, dark green. Flowers produced upon the apex of the small branches, mostly in couples; these are tubular and clavate, furnished with short hairs; colour deep reddish purple, green at the ends. Whole flower gummy.

E. nitida.—This is a perfect little gem, and should be more frequently found in amateurs' collections. Leaves obtuse, linear, spreading, arranged in threes and dark green. Flowers terminal, on short footstalks, in small umbels of three to six, globose, with a recurved limb, clear snow white.

E. metulæflora bicolor (fig. 9).—A charming free-flowering variety, free from the pest mildew, which is such a plague to the old metulæ-



FIG. 9.—ERICA METULÆFLORA BICOLOR.

flora. Leaves arranged in fours, linear, smooth, and light green. Flowers in terminal umbels of six to twelve, tubular, erect and oblong, soft rose colour, with a white neck and limb.

E. ornata.—This is a superb garden hybrid. Leaves arranged in fours, linear obtuse, hairy at the margins, and deep green. Flowers arranged in terminal whorls of six to twelve; they are large, tubular, with an inflated base, where the colour is soft rose or rosy carmine passing into white, and with a pale green band round the neck; segments of limb reflexed, white.

E. lateralis.—A slender-growing species, much branched. Leaves arranged in fours, linear obtuse, erect and dark green. Flowers globose, set upon long coloured footstalks, arranged in terminal umbels of six to twelve, and deep purple.

E. cubica minor.—A slender, dwarf, much-branched plant of great beauty. Branches arranged in whorls of three to five. Leaves linear obtuse, arranged in fours, shining dark green. Flowers in whorls near the ends of all the branches, bell-shaped, and deep reddish purple.

E. Aitoniana Turnbulli.—A slender-growing plant of great beauty. Leaves broadly linear, spreading, slightly recurved, dark green. Flowers an inch or more in length, in umbels of six to eight, tubular. Flowers white, changing to flesh colour or pink by exposure to the sun and air; segments of limb large and spreading, white.

E. infundibuliformis.—This is a dwarf-growing and very elegant species. Leaves arranged in fours, linear obtuse, smooth, erect, and dark green. Flowers in large terminal whorls upon all the branches; tubes long and slender, bright red; limb white; calyx imbricated, leafy.

E. effusa.—This together with E. ornata are garden hybrids which originated with the Messrs. Rollinson & Sons of Tooting, and they cannot be too highly recommended, for they are of good habit, large flowers, fine colours, very distinct and profuse bloomers. In this variety the leaves are dense, linear obtuse, dark green. Flowers produced in large terminal whorls of six to twelve, large, tubular, with an inflated base; colour wholly bright reddish crimson; segments of the limb reflexed, straw colour.

E. cerinthoides.—A strong and vigorous grower, although somewhat lax, and therefore requiring more support than many other kinds. Leaves in fours, linear oblong, acute, and profusely clothed with long light-coloured hairs; whorls terminal, many-flowered. Flowers tubular, with a slightly contracted neck, about an inch long, hairy, bright scarlet throughout. In the variety coronata the leaves are shorter and more erect, whilst the whorl of flowers is larger and spread evenly round, forming a corona or crown upon the ends of the shoots.—T.

LAMBTON CASTLE GARDENS.

A VISIT to the above is always pleasant and interesting under the guidance of Mr. Hunter. The beauties of Lambton Castle have so often been described in the pages of the Journal that reference here will be unnecessary at any length. Suffice it to say, it was just after a June shower we drove into the park, where all the beautiful contrasts of various shades of green foliage were seen to great advantage; the winding walks, well-kept drives, and the tortuous course of the river Wear, which is nearly navigable up to the castle, makes the pleasure greater after a few hours' escape from a begrimed and smoky town.

On the large terrace in front of the principal row of vineries is a series of beds which will have an imposing effect when the plants are fully developed. The groundwork is principally Antennaria tomentosa, Lobelia Blue King, Alternantheras, Echeveria secunda glauca, Veronica repens, &c. These are planted in a series of geometrical figures, which are bold, and will give a massive effect.

In the glass structures we were much struck with the marvellous crops of fruit in pots, especially of Pears. Amongst a dozen seedlings Mr. Hunter has received there is one that ripened its fruit on the 8th of June last. This was started in March with other varieties; the fruit is well coloured, good flavoured, in size about as large as an ordinary Beurré Diel, and resembles a Pitmaston Duchess. The name of the fruit is Blanche Claude. Mr. Hunter is much charmed with it, and in future it will no doubt form a very valuable acquisition for early work. Some little trees in 10 and 14-inch pots were carrying from one to three dozen fruits each; all the ordinary varieties are grown and each is found to do well, Pitmaston Duchess often attaining 20 ozs. each. Mr. Hunter's success is evidently due to being a very close observer of Nature. He argues, and with much logic, that when a tree bears a heavy crop one year it is generally not so good the second. This is always apparent under natural circumstances, but when artificial means are employed the practice of Mr. Hunter is still more effective, as by giving all the trees that bear well a year's rest they regain their lost vigour, and as there are some 500 trees in pots this can be easily carried out. Some grand Plums were also good. Trees of Prince Englebert were positively laden from base to summit with fine fruits. Some of the varieties of Pears we omitted to mention often attain from 12 to 15 inches in circumference.

In the vineries we observed some very fine bunches of Black Hamburgh, 8 to 9 lbs. each, especially one Vine, which has always borne well. On each rod there averaged twenty-six bunches each. There were also grand bunches of Trebbiano and Calabrian Raisin all equally large. In the early house the bunches, 3 lbs. to 4 lbs. each, of Black Hamburgh, were well coloured and finished to perfection. The earliest house was started on the 1st December, Muscats were extremely fine, and so were Alicantes. There is a new vinery planted from last year's eyes, and the Vines have now made growths up to the top of the rafters, and there is no doubt that in future exhibitions the fruit from this vinery will be admired. We observed some fine plants of Hydrangeas 6 and 7 feet high, trained in a pyramidal form, and very symmetrical; they were placed there to make their growth. They had just come from the conservatory, where they had flowered profusely, and are found most useful for decoration.

In the stoves we were struck with the profuseness of Stephanotis, which runs everywhere, and blooms at every joint; 1000 trusses have been cut in a month, and up to the 15th of June last, the time of our visit, 825 trusses had been cut for June. They are planted just between the pipes in the usual soil, and flower most admirably. Ixoras were also planted out in borders, and were equally as floriferous as the Gardenias. In the conservatory, the stove, or any available place, Eucharises are planted out and throwing up flowers freely, and, as Mr. Hunter points out, potting is saved, less water is required, and drying is not needed, which are all great savings in a large establishment where so much is required, but there are also some very fine plants in pots which are used for conservatory decoration.

In the warm conservatory is Phœnix dactylifera in flower. Last year this plant was much used for table decoration, where the colour of the fruit is found to be attractive. This is advantageous for the winter months, while many like and enjoy the fruit. Cycas revoluta is also used in the same way. Mr. Hunter has a great number of seedling Crotons which seem to possess considerable merit. Many of them are extremely fastigiated and diversified in leaf and colour. There are a

half dozen fine specimens, and by autumn they will have attained a glorious colour. Plants of Crotons Andreanus and mutabilis averaged about 6 to 7 each high, and were marvellously clean. They are syringed twice a week with 3 gallons of water containing half a wineglassful of petroleum, and neither scale, thrips, nor mealy bug was visible. —B. COWAN.

DEGENERATION OF FRUIT AND VEGETABLES.

[A paper read before the Massachusetts Horticultural Society by Mr. O. B. Hadwen, Worcester, U.S.A.]

THE term degeneration, in its larger definition, when used with reference to fruits and vegetables, is generally understood to apply to those which, having been cultivated for a longer or shorter period of time, and having had their day and generation, seem to have run out and no longer retain their original characteristics. Nature seems to have endowed every plant known in the vegetable kingdom with an allotted term or definite period of life; especially when growing in its native climate and soil, and surrounded by conditions not unfavourable to its life, growth, maturity, and method of reproduction. In attempting the inquiry into the period of longevity of fruit-bearing trees, and fruits growing thereon, together with the fruit-bearing bushes, shrubs, canes and Vines, I find but few data relating to the subject, and must rely largely upon my personal observation and experience, and my own recollections of the past fifty years. All the fruit-bearing plants are naturally grown from seed planted by the intricate processes of Nature. The seed contains all inherent natural forces requisite for reproducing its kind, and the seedling plant seems endowed with the vitality and functions requisite for and pertaining to its growth, maturity, and reproduction during its destined period of life. The time allotted for the continuance of plant life seems as variable as the external features of the plant itself. Whilst the limit of human life may be three score years and ten, in tree or plant life we know it may be many times three score years. The average lifetime of the lower animals is well known; but comparatively little is known of the life of fruit-bearing trees, and even less regarding the time our popular varieties of fruits will continue to be produced in perfection under the prolonged cultivation of the sagacious horticulturist.

The causes, natural and artificial, of fruits degenerating and becoming unworthy of cultivation are but imperfectly understood; as the many sorts seem to be subjected to many varying conditions. In the case of each we have to consider its natural hardiness and longevity, the influence of soil and climate, the stimulating effects of liberal cultivation, the mysterious influences of engrafting, both as to stock and scion. All these and similar questions underlying the subject are so clouded and obscure that we can neither fully explain nor comprehend them. Nevertheless there are some facts that seem to throw a little light upon the subject. While perhaps it is utterly impossible to fully verify the causes that seem to augment the degenerating tendencies in fruits, the facts we rely upon seem apparent, and although the evidence by which we trace the causes seems partially circumstantial, yet it is unequivocal, so far as it goes, and cannot well be set aside in communities where cultivation has been pursued for fifty years or more by "the art which doth mend Nature."

The Pear trees grown from seeds which were planted by the earlier settlers of America were of a robust habit of growth, attaining large size and great age, and have outlived many generations of men; and of those known to have borne fruit as early as 1663 some are still alive. The Pear tree is indigenous in sections of the northern temperate zone, flourishing as far north as the fifty-seventh degree of latitude, and is grown in this country from the British Provinces to Mexico. In acclimating and growing the Pear in a warmer climate, its primitive habit of long life seems to be partly lost. Growers long since abandoned planting the seeds from the original fruit, using instead the seeds of the engrafted sorts, which are of a more tender habit; by this practice breeding into the Pear tree an inherent tendency to shortness of life. The continued process of engrafting and forcing by high cultivation and also growing in an impoverished soil—each and all may exert some influence in the direction of degeneracy; and it is certainly evident that the trees are everywhere tending to earlier fruitage and shorter life.

The almost universal practice of propagating desirable sorts by engrafting or budding has undoubtedly the effect of gradually, but surely, working a serious injury to some-fruit-bearing trees. The tendency of continuously planting the seeds of improved sorts is very much the same as what is called in cattlemen's parlance "in-and-in breeding," which if long continued in a given line is a sure and constant cause of degeneration. Now, if the tree from any cause is losing its natural stamina and force, or becomes defective or diseased, the weakening of its natural functions very soon becomes manifest in the fruit. The St. Michael, in its day the glory of the Pears, has now become wholly unworthy of cultivation. Sometimes it seems to recuperate in new countries and thrives for a time in a virgin soil, but soon relapses into its now normal condition. The Flemish Beauty affords another illustration of degenerating tendency. It was first brought into notice in 1834, and promised well for many years, but has now become unworthy of continued cultivation.

In the catalogue of trees grown in the nursery of the late William Kenrick in the year 1838 (he being then one of the prominent nurserymen in Massachusetts), I find, in the class termed "Old Pears," twelve sorts of which not one has been shown on this Society's tables for years. In class second, termed "New Pears," I find eighty-seven; of which seventeen varieties only are seen at our exhibitions, and but four of these are generally approved—viz., the Bartlett, Bosc, Seckel, and Angoulême, and the rest are only occasionally shown. In the list of new Pears received in this country from Europe in the years 1834 to 1836, consisting of 140 varieties, which have been tried by our cultivators, and (most of them) shown on our tables within the past forty years, I find but two that are now considered worthy of cultivation; and Mr. Kenrick mentions 100 other sorts received but not tried.

In the catalogue of the late William R. Prince of Flushing, N.Y., for the year 1839, designating by name 367 varieties, I find but thirteen varieties that are seen on our tables. Then we are made aware of the very numerous sorts of Pears which were being brought into notice forty or fifty years ago—more than 350 varieties, out of which less than twenty are on our premium list for the present year, and the other 330 have practically gone out of cultivation. In the meantime very many more sorts have been introduced, in large part seedlings of American origin, and out of this vast number twenty-five varieties would be quite as many as are worthy of the Society's approval and encouragement.

Now it would be unfair to state that this very large number found unworthy of cultivation have degenerated, doubtless many causes contributed to influence their rejection. Some were found poor growers, the fruit in many cases lacked the qualities essential in good Pears; some seemed naturally predisposed to blight and other disease, and many seemed unsuited to the soil and climate.

But it appears, although difficult to prove, in the case of some sorts once highly esteemed for general cultivation, but now become degenerate, that the tree has already lived the time allotted by Nature, and its production of fruit in its enfeebled condition is prolonged only by nursing, or by engrafting on other and vigorous stocks. This suggestion opens quite another phase of the question—viz., How much can fruitage be prolonged by the process of engrafting or budding?

There was formerly an adage, "He who plants Pears plants for his heirs," while now he who plants Pears gathers a crop in a few years; and the trees mature, bear fruit, and die, even before the heirs are born. But it can easily be demonstrated that the natural lives of the original sorts of Pear trees have been longer than the joint or aggregate lives of several generations of men; and also that the product of fruit from an original stock can be artificially prolonged by engrafting to an undetermined extent.

The Apple trees that were grown from seed planted by the early settlers, and cultivated as early as 1663, in many instances proved long lived, some reaching the age of 200 or more years; these trees attained great size, and bore immense crops of natural fruit. I know of Apple trees still bearing good crops that have every appearance of being 150 years old; and I know of engrafted Apple trees more than sixty years old that are still productive and unimpaired. On the other hand I can point to an orchard which was set forty-five years ago, and has received high cultivation, that has already become old and worthless, having no force to make healthy wood or bear fruit. And I read that Apple orchards in some of the north-western States do not average more than twenty years in bearing. The process of degeneration or decay of the Apple seems to be less rapid than that of the Pear; out of sixty varieties, mostly of American origin, grown fifty years ago, more than forty are now grown and esteemed. In fact I can recall but few sorts once extensively grown that are proving worthless; and in reviewing the history of the Apple it must be admitted that it is not only the most valuable fruit in this section of the country, but also long lived, and is manifesting at present but few signs of decay. The Early Harvest and the Newtown Pippin seem to be on the wane, and a few more are tending in that direction. On the other hand the Rhode Island Greening, known in cultivation for 150 years, is seemingly as good as as ever, both in tree and fruit, and promises to last for a long time. The Costard, one of the oldest Apples grown in England, was recorded in the thirteenth century.

Among the fruits that were formerly plentiful the Peach is the best demonstration of degenerating tendencies; it is the one that seems least able to withstand the departure from its normal condition occasioned by engrafting and modern usage, and the effects of climate. In former years the Peach was grown from the stone exclusively, and grafting was not practised. Then the trees not only escaped disease but withstood the vicissitudes of the climate unimpaired and produced abundant crops, the ground under them, within the memory of many now present, used to be literally covered with luscious fruit at the season of ripening; while the life of a Peach tree often extended to fifty years, and by cutting back to the ground and allowing it to sprout from the root, to even a much longer period.

But when the nurseryman commenced to prolong the existence of improved varieties of fruit by budding not many years elapsed before the loss of original stamina and hardiness became apparent. Before long (in 1818) that destructive disease known as the "yellows" crept in. This was first noticed or described in print by a nurseryman in 1823; it was very soon ascertained to be contagious, and that the disease had come to stay. In the northern sections of the country Peach growing, always precarious, now seems utterly ruined.

The question of actual degeneration seems fairly settled in the Peach tree, and the fruit follows the tree, and varieties have become lost. Now the question naturally arises, Can the Peach be restored? Evidently not until the budded trees are thoroughly extirpated, root and branch. We must resort to the custom of our ancestors, of growing trees from seeds, and these seeds should be procured from sources where disease is unknown in any form. Then we may hope with reasonable certainty for another period of healthy Peach trees and luscious fruit.

Many sorts of Peaches reproduce their like from the seed. These fixed strains should be encouraged, and painstaking cultivators might impregnate the blossoms of such with pollen of good sorts. By saving the stones of fruit thus produced they would materially increase their chances of success in producing new and desirable varieties.

(To be continued.)

LEE, BLACKHEATH, AND LEWISHAM SHOW.

THE twenty-first annual Exhibition of fruit, flowers, and vegetables was held in a field adjoining the gardens of Mrs. Penn, The Cedars, Lee. The Exhibition was one of the best held in the suburbs this season, and the Committee, with the energetic Secretary (Mr. C. Helmer) may be congratulated on its success. A serious drawback, however, was the most unpropitious state of the weather on both days, the rain rendering the ground extremely wet. As a consequence of this the funds of the Society will suffer considerably, but no doubt in the future, as in the past, the members will give their ungrudging support, and thus help it out of its present dilemma.

The exhibits were of the most praiseworthy character. The plants were quite up to the average of former years, and the fruit and vegetables, also cut Roses, better than have ever been shown at previous exhibitions.

Special prizes were offered by the tradesmen and leading residents of Lee. The first class for a collection of vegetables and salad combined, open to gentlemen's gardeners and amateurs, had four competitors. The collection of Mr. F. Fox, gardener to Mrs. Penn, contained an excellent assortment and nicely arranged lot of vegetables, which gained first without any difficulty. Mr. Nunn, gardener to — Soames, Esq., came in second with a good lot, and Mr. W. Jeffery's third was very creditable. The prizes in this ease were offered by Messrs. Maller and Son, Keech, and Nettlefold. In the second class, for two more prizes offered by the tradesmen of Lee for a collection of twenty-four miscellaneous plants, pots not to exceed 9 inches, Mr. J. Hudd, gardener to F. W. Prior, Esq., was first with a nice group; Mr. S. Reeee, gardener to R. Whyte, Esq., second; and Mr. W. Garland third. For a similar number of prizes offered by the tradesmen of Blackheath for a group of plants arranged for decorative effect, space not to exceed 40 superficial feet, Mr. J. Barker secured first with a charming and most effectively arranged group, the plants employed being light and graceful, and flower and foliage in proper proportion to each other. Mr. J. Hudd was second, but his arrangement, though good, was too flat and set; third, Mr. Nunn. There were only two competitors in the class for a collection of twelve plants in flower, the first prize going to Mr. W. Jeffery, gardener to J. Young, Esq., and the second to Mr. H. Martin, gardener to A. English, Esq. Three prizes offered by Messrs. John Laing & Sons for six distinct named tuberous Begonias created a sharp competition. The first prize was well won by Mr. R. Sholdice, gardener to R. P. Barrow, Esq., with exceedingly well grown and flowered plants; Mr. C. Helmer, the Secretary, coming in a close second, and Mr. W. Garland third.

The class for nine cut Roses had six competitors. The first place was easily gained, however, by P. Burnand, Esq., Reigate, with grand blooms of Ulrich Brunner, Madame Gabriel Luizet, François Michelon, Louis Van Houtte, Marie Baumann, Prince Arthur, John Hopper, Baroness Rothschild, &c.; and the second, by Mr. G. Barker, were also highly creditable, which would have run rather close for first had the blooms been arranged to better advantage. For four Fuchsias, distinct, Mr. C. Saville, gardener to J. W. Wilson, Esq., was first with finely grown and well flowered examples. Mr, Clark, gardener to H. Wolffram, Esq., second, and Mr. T. Dobson, third. Messrs. Merryweather & Sons offered as a first prize for a collection of salad and vegetables in twelve varieties a length of their new sphineter hose grip flexible indiarubber armoured garden hose, this being won by Mr. C. Nunn, and a second prize in books by Mr. W. Garland.

Messrs. James Carter & Co. also offered a special prize for the best six varieties of vegetables, but there was only one competitor, Mr. W. Burgess. This exhibit, however, was a highly creditable one for an amateur, and he was accordingly awarded a first. We now come to the last of the specials, this being a series of three prizes offered by R. Whyte, Esq., for a table of plants. The first was deservedly awarded to Mr. F. Fox, gardener to Mrs. Penn, for good plants. Mr. Clark second, and Mr. Jeffery third.

In the gentlemen's gardeners' classes for six stove or greenhouse plants in flower, other than Orchids, there were but two competitors. As usual, Mr. Reece, gardener to R. Whyte, Esq., carried off the first prize with very fine examples of Allamanda grandiflora, Rhyncospermum jasminoides, Erica Parmentieri rosea, &c.; Mr. J. Hudd, gardener to F. W. Prior, Esq., being second with creditable specimens, including a well grown and flowered example of Diplacus glutinosus.

In the class for six plants of ornamental foliage, Mr. Reece again secured first place with admirably grown specimens of Philotænium Lindeni, Alocasia metallica, Croton Warreni, Livistonia rotundifolia, &c.; Mr. Hudd coming in second with highly creditable examples of Anthurium Warocqueanum and Cycas revoluta; Mr, Lamber, gardener to H. W. Segelcke, Esq., securing a third. For six show Pelargoniums Mr. Reece was first, having grand plants of La Pureté and Hercules; Mr. H. Martin second, and Mr. G. Barker third. For six double flowering Zonals Mr. H. Martin first, and Mr. Clark second. The class for six exotic Ferns was warmly contested. The chief honours fell to Mr. Hudd, who had grand specimens of Davallia Mooreana, Microlepia hirta cristata, and Dicksonia antarctica in his collection. Mr. S. Reece, who in former years has occupied the highest winning position in this class, had to be content with second place this year. This exhibitor had a magnificent specimen of Davallia fijiensis in his group, probably the finest in the country, but his other plants lacked size and finish as compared with other years. The third prize went to Mr. R. Sholdice. Mr. J. Lambert scored a first for four Lycopodiums, and Mr. W. Jeffery a second; whilst for six Caladiums Mr. H. Martin was first with fine well coloured plants of Dr. Lindley, Albert Edward, Louis Duplessus and Leplay. Mr. T. Aley a good second, and Mr. W. Jeffery third. Mr. S. Reece was the only exhibitor in the class for six Heaths, and he deservedly received the award of a first. The Fuchsia classes were well contested, Mr. Dobson, gardener to F. T. Preston, Esq., being first for six pyramids; Mr. W. Jeffery second, and Mr. H. Martin third; the latter also being first for a couple of standards, and Mr. J. Hudd second. Gloxinias were grand, especially those shown in the class for six by Mr. R. Sholdice, one of which was carrying upwards of forty blooms. These of course gained the first award, and they were closely followed by Mr. G. Barker's, which came in second. Mr. S. Reece was first for a specimen plant in flower with Dipladenia profusa; Mr. Hudd second with Allamanda Schotti, and Mr. W. Garland third. For the best specimen out of flower, first, Mr. Lambert; second, Mr. W. Segrott; third, Mr. Hudd. Mr. Reece was first for six Dracænas, his examples of pulcherrima, amabilis, Lindeni, Baptisti, and hybrida being beautifully coloured. Mr. Clark came in second, and Mr. W. Jeffery third. Only one competitor entered the list for a specimen show Pelargonium, and this was Mr. Jeffery, to whom a first was awarded.

In the gentlemen's gardeners' and amateurs' classes, for four plants of ornamental foliage Mr. W. Jeffery was first with Croton Youngi, Pandanus Veitchi, Croton Veitchi, and Dracæna Baptisti; and Mr. C. Nunn second, there being only two competitors. Orchids were not represented very strongly. Mr. J. Hudd was the only exhibitor in the class for four, his plants comprising Cattleya Mossiæ, Odontoglossum grande, Aerides virens, and Oncidium crispum, all well grown and flowered. For a specimen Orchid in flower Mr. Hood, gardener to M. N. Buttanshaw, Esq., was first with a well flowered and fairly good type of Odontoglossum vexillarium; Mr. Hudd second with Dendrobium Pierardi; and Mr. Jeffery third with Aerides odorata. For four ornamental foliaged Begonias Mr. Lambert was first, there being no other competitors, the same exhibitor again coming in first for four Tuberous Begonias, Mr. C. Helmer second, and Mr. R. Sholdice third. Mr. F. Dobson was first for four Gloxinias, Mr. Helmer second, and Mr. T. Aley third. In the class for four exotic Ferns Mr. J. Lambert received the premier award for well grown plants of Adiantum farleyense, Asplenium nidus avis, and Davallia Mooreana, Mr. Jeffery receiving the second, and Mr. G. Baker the third. There was only exhibitor in the class for six hardy Ferns, consequently only one award was made, a first to Mr. R. Sholdice. The class for four Dracænas had only two competitors, these being Mr. Hudd and Mr. Lambert, who were placed first and second respectively. For six Palms Mr. Reece was first, and Mr. Jeffery second. For three plants for dinner table Mr. J. Lambert was first, Mr. Clarke second, Mr. Hudd third, and Mr. W. Garland fourth; and for a single plant, first Mr. Lambert, second Mr. Hudd. Mr. W. Jeffery was the only exhibitor of four show Pelargoniums, and was placed first, receiving a similar award also for four Zonals, Mr. Hudd being second. Mr. Jeffery also secured first for four double flowering Zonals. Mr. S. Reece again came forward as the winner of the premier prize in the class for six exotic Ferns, and Mr. Clark and Mr. C. Nunn are the respective chief winners in the class for six Caladiums, and Messrs. J. Lambert and H. Martin the Petunia classes.

Amongst the cut flowers Roses formed a prominent feature of the Show. In the class for forty-eight, Mr. A. Harris of Eltham was first, and Mr. F. Fox, gardener to Mrs. Penn, second, the blooms in both cases being above the average in size and quality as generally exhibited at this Show. In the twenty-four class there was a brisk competition. The first was carried off by P. Burnand, Esq., Reigate, with even, well-finished blooms; Mr. G. Barker coming a close second, and Mr. J. Bateman third. The twelves were also shown in good form, the stand of Mr. G. Barker, which gained the first prize, containing some exceptionally good blooms of Countess of Oxford, Marie Baumann, and one or two others; Mr. Burnand came second, and Mr. J. Bateman third. Mr. J. Hudd was first for a box or stand of cut flowers, and Mr. J. Garland second. In the class for a hand bouquet, Messrs. G. Shrubb and E. M. Kenward were the respective winners.

There was a goodly quantity of fruit exhibited compared with former years. Mr. Jeffery was first for a collection of six dishes. In the class for three bunches of black Grapes, Mr. Payne was first, Mr. J. Hudd second, and Mr. Jeffery third. For three white bunches, first, Mr. Payne; second, Mr. Hudd; and third, Mr. Jeffery. Mr. Payne was also first for a single bunch of white and black, Mr. Hudd being second. Mr. W. Garland was first for a dish of Bellegarde Peaches and for a dish of Nectarines. For a Melon, Mr. C. Saville was first; and for a dish of Strawberries, Mr. G. Shrubb was first, and Mr. Fox second. Messrs. W. Segrott, A. E. Martin, and G. Shrubb were the chief prizetakers in the classes for salads and Cucumbers.

Mr. W. Garland and G. Shrubb carried off the leading prizes for collections of fruit, and Messrs. Stockwell, Fox, Nunn, Burgess, and E. Martin in the vegetable classes.

Some very effective arrangements displaying the highest skill and taste on the part of the lady exhibitors were shown in these classes. The winning stand of cut flowers by Miss Bidwell was exceedingly

pretty, being composed of light sprays of Maidenhair Fern and blooms of Spanish Iris, the whole looking charmingly beautiful and chaste. Miss Dent was second, but hers was not nearly so pretty as the last named. Only one bouquet was shown, but this was well arranged and composed of choice flowers. Miss E. Helmer was the winner of a first prize for this. Three lots of buttonholes were shown, Miss Helmer being first and Miss Dent second. Miss Bidwell was first for the best arranged basket of flowers, and Miss E. M. Kenward second.

There were in addition to the foregoing a number of classes set apart for cottagers and amateurs, and these were all fairly well contested. Groups of plants were contributed by Messrs. J. Laing & Sons, B. Maller and Sons, and others, and wreaths and crosses by W. Garton, nurseryman, Blackheath. Messrs. Laing also showed a collection of cut Roses not for competition.



KITCHEN GARDEN.

THE WEATHER AND VEGETABLES.—The present season is too wet and sunless for most vegetables. Turnips have formed an unusual amount of top growth, but the roots are small. Peas are tall and luxuriant, but they do not fill well. Broad Beans are failing to produce many flowers. Runner Beans are late—we shall not gather any during July; but the dwarfs in the open are ready, thus showing the advantage of sowing the latter as well as the former. The Potato crop we are most concerned about; last year diseased tubers were quite exceptional; the year before that, and indeed for several years previous, the crops were wonderfully good, but a dripping July almost invariably produces much disease.

MAGGOTS.—Last year, although hot and dry, vegetables were free from maggots at their roots. Onions, Carrots, and other crops were never touched, but we fear they are not going to enjoy the same immunity this year, as we know of several instances where the maggots are attacking the Carrots and Onions. This is bad news, and efforts must be made at once to check them. A good sprinkling of soot, gas lime, or salt should be strewn amongst the plants, to be washed down with the rain, and where it is too late to save the crops sow again. Carrots of the Horn type if sown at once will gain full size before November. There is no use in being disheartened by a failure this year. Sow again and persevere, but before doing so take the precaution to dress the ground well with some of the ingredients named above.

COLEWORTS.—Some imagine this to be a very distinct vegetable, but it is really only a form of Cabbage, and Cabbage planted in July may often be taken for Coleworts in November, but they are not so hardy as the Rosette Colewort, and this is the variety that should be grown. To be of any use they must be planted out before July is over. They do not grow to a large size, and may be planted at a distance of 15 inches apart. They are equally as hardy, and more delicate on the table than Savoys in winter.

CELERY.—We cultivated a quarter of the American White Plume Celery the first season it was introduced, and have done so ever since; but we have more than usual this year, as it is useful in the autumn. Our earliest plants are 2 feet high, very white; in fact, in good condition for present use or showing. But this novelty has not induced us to give up the ordinary Celery, and no one should do this, as we must all depend upon these for winter and spring use. The earliest rows in the trenches may be earthed a little. Break off the small side leaves before commencing this operation. Dust the stems with soot, and then break the soil well up along each side of the trench, and put it up to the stems with the hands. This is not such a quick way of earthing as pushing the soil in and about them with the spade, but it is the best way to prevent the plants being spoiled by the soil falling into their centres. More late plants may still be placed out, and if some are planted on the level ground they will be useful for flavouring.

OPEN AIR TOMATOES.—These are now receiving a great deal of attention, but it is not a good season for succeeding thoroughly with them, as they delight in plenty of sunshine. The only way to secure a crop this year is to keep them very bare of foliage, and expose the fruit as much as possible, only one or two main stems being taken up from each plant, and some of the largest of the leaves on these may be cut off. Eight, ten, or a dozen fruits may form as a cluster, but if the smallest of these are removed and only three or four left on each cluster they will have a much better chance of gaining a good size and ripening. Do not overwater them, and avoid giving them liquid, as under present circumstances this would only tend to make them form a superabundance of foliage. Some time ago we plunged a quantity of plants in 6-inch pots along the bottom of a south wall, and these are bearing much better than those which were planted out.

CAPSICUMS AND EGG PLANTS.—These may both be grown together, but neither will succeed in the open; and if warmer quarters than a cold frame can be given them they will be benefited by it. Do not overpot them. Let the plants become root-bound if plenty of fruit is desired. Syringe frequently to keep them free from insects, and close early in the afternoon to induce the fruit to ripen.

CABBAGES FOR EARLY SPRING.—It is now well known that Cabbages are more valuable and acceptable in early spring than at any other time. They can never be too early or too good, and the present is the best of all times to sow the seed. We always sow during the last week in July. Good varieties are numerous. Form a bed large enough to raise sufficient plants to meet the demands. Make the soil moderately rich, sow the seed broadcast, and cover it with the surrounding soil to the depth of half an inch. See that the young plants are not destroyed by birds or insects, and keep them free from weeds.

FRUIT FORCING.

VINES.—*Earliest House.*—The Vines now require a dry atmosphere to thoroughly ripen the wood, but it will not be necessary to employ artificial heat to secure the requisite warmth. Free ventilation will be all that is in most cases necessary, but where the Vines are vigorous and have a tendency to strong growth in the laterals the house may be kept at from 80° to 85° by day by reducing the ventilation, yet not entirely closing the house, and throw the ventilators fully open at night. Syringe occasionally to cleanse the foliage of red spider. The border must not be allowed to become parchingly dry; a mulching of any spent litter will prevent evaporation and the surface cracking. Cover the outside border, if the weather be very wet, with lights to throw off the rain. Keep all laterals and late growths well in hand, and they must not in any case be allowed to interfere with the access of light and air to the principal leaves, and they must not be reduced to such an extent as to cause buds below the first stopping to start; therefore, lateral reduction must be practised with judgment. In the case of weakly Vines an extension of the laterals will tend to promote an increased root action, and an application of liquid manure contribute to the plumping of the buds. Such Vines should not be pruned too closely, allowing the growth to extend as far as circumstances allow.

Vines in Pots.—Those for next season's fruiting will have completed their growth, and cannot have too much light. Give only enough water to keep the leaves fresh; but if the soil is too dry it will induce premature ripening, and excess of water will unduly prolong the growth.

Young Vines of the Current Year's Planting.—Allow them to make all the growth practicable consistent with the exposure of the foliage to light. Nothing is gained by crowding the foliage of young Vines, not even those that have to be cut back to three or four eyes at the winter pruning, whilst any that are to afford fruit next season should have the laterals rather closely pinched back to a length of 6 or 7 feet of the canes, the canes being stopped at that length, above which the laterals may have more latitude, as they will aid in the production of roots.

Midseason Houses.—The Grapes in these are commencing to colour. The inside border should have a thorough soaking with liquid manure or a surface dressing of some approved fertiliser applied, and washed in with rain or pond water. If well water be used it should be brought to a temperature equal to the mean of the house before being applied. With a mulching 2 to 3 inches thick of some short but only partially decayed material, as stable litter freed of the strawy portions, the watering will hardly require to be repeated, but it is necessary to distinguish between varieties that ripen in a short time and those that require nearly double the period. Black Hamburghs and similar sorts ripen in much less time than Muscats, and those do not require so long a time as the thick-skinned varieties, therefore the waterings must be continued longer for the latter than the former, and so as to suit the requirements of each. Moderate air moisture is necessary for preserving the health of the foliage and to ensure the swelling of the crop, which is considerable as regards the size of the berries after they commence ripening. Admit air freely, a little constantly so as to insure a circulation constantly, increasing it early so as to prevent the air moisture being condensed on the berries. Maintain a night temperature of 70°, 5° more by day, with 80° to 85° from sun heat. Muscats should have a night temperature of 70° to 75°, and 80° to 85° or 90° by day. Vines that are carrying heavy crops require more time, allowing the temperature to fall to 65° or even 60° to rest the Vines, and they should be encouraged to extend, rather than be checked by closely pinching the laterals. Varieties that are liable to crack must have a heavier mulching of dry material, and great care be taken to prevent moisture being deposited on the berries, admitting air freely, and keeping a gentle warmth in the pipes.

Houses of Ripe Grapes. — White Grapes assume more colour by exposure to light, and they are more subject to spot and decay through moisture in the atmosphere. During moist weather, therefore, a constant circulation of air must be kept to prevent moisture condensing, which will necessitate gentle heat in the pipes. Black Grapes will not keep colour long unless the foliage is good, nor plump unless moderate air moisture is present. A double thickness of herring nets placed over the roof lights will assist in preserving the colour and bloom. Afford sufficient moisture at the roots to maintain the foliage in good condition. If the necessity for water arises (and it is no use waiting until the berries shrivel, for no amount of water afterwards will restore them to plumpness) afford it in the early part of a fine day, and afford air freely so as to dissipate moisture from the surface before the necessity arises of withdrawing it for the day. A temperature of 60° will be ample at night and 5° more by day artificially.

Houses of Late Hamburghs.—These will not require artificial heat unless the weather be unusually cold, as has been lately, necessitating

fire heat in houses to which it is not usual, to apply it in July. A temperature of 60° to 65° should be maintained at night, and 70° to 75° by day, in order to a satisfactory swelling of the crop. Inside borders must have a thorough supply of water or liquid manure as necessary, and to encourage surface roots a mulching of some short but not very decayed manure should be given, and a few fresh horse droppings sprinkled on the surface occasionally will afford ammonia vapour, contributing to the health of the Vines. Close early, well damping available surfaces at the time, but the temperature after closing ought not to exceed 90°. Ventilate between 70° and 75°, and keep through the day from sun heat at 80° to 85°. Leave a little ventilation at the top of the house at night, increasing it early so as to dissipate the moisture condensed through the night before the sun acts powerfully upon the house. Allow as much lateral extension as can have exposure to light, but growth must not be allowed to extend at the expense of the main leaves. Avoid large reductions of foliage at one time, acting on the little-and-often principle, so as to avoid giving a check to the roots.

Late Houses.—Examine the bunches, removing any stoneless berries, those that are likely to interfere with the symmetry of the bunch, as well as to rectify any defect in under-thinning, so as to give room for the berries to attain their full size without wedging. The shoulders also should be seen to, tying up where necessary, and if there is a larger crop than the Vines are likely to perfect, remove at once some of the least promising bunches. Thorough supplies of water or liquid manure should be afforded, and mulching internal borders, alike to maintain uniform moisture at the surface of the border and source of aliment both to the roots and atmosphere by the matter evolved through the decomposing materials.

PLANT HOUSES.

Allamandas.—If trained under the roof of structures where a stove temperature is maintained Allamandas will grow luxuriantly and flower freely. Those started into growth early in the year are certain from this time to shade the plants beneath them unless care is taken to judiciously thin the shoots at intervals of a week or ten days. When a growth flowers a number of shoots start away, and these only crowd the roof unless some are removed. Plants grown in as natural a manner as possible may from this time be used for furnishing the conservatory or other structures kept gay with flowering plants. Formally trained specimens rarely look well associated with naturally grown plants, unless special positions can be accorded them. The best method of training for this purpose is to secure the main branches to four or five stakes placed round the side of the pots, and the young growths and flowers not tied in too stiffly. Carefully prepare the plants previous to removal, and do not admit cold draughts to them; they should also be carefully watered.

Stephanotis floribunda.—Whether trained upon trellises or under the roof Stephanotis is very liable to become overcrowded with growths. When this is allowed to take place it is almost impossible to keep them free from mealy bug. Those that have flowered, and which are trained to trellises, may have the weak-growing ends of the shoots removed, and if practicable the shoots taken from the trellis and trained under the roof of some structure where they can be fully exposed to the sun, and where liberal ventilation can be afforded. Those trained under the roof may be freely thinned to give more room to young shoots that are only now being produced. These late growths, if exposed to plenty of light and air, will flower freely, and thus prolong the supply. If mealy bug has appeared syringe liberally with petroleum and water—1 oz. to a gallon of the latter. Shade the plant from the sun for a few days afterwards until the oil has evaporated.

Bougainvilleas.—Remove all the weak twiggy shoots from plants that have flowered. It is useless to allow these to crowd the plant until the end of the season. By their removal the plant can devote all its energies to the full development and maturation of the strong shoots that will be needed another year. These plants are very useful for furnishing the conservatory during the time they are in flower; the cool airy temperature will suit it admirably. The flowers and foliage will both be of a much darker shade of colour than when grown in heat.

Clerodendron Balfourianum.—Clerodendrons that have made luxuriant growth since flowering require lighter, cooler, and more airy quarters, as in a close moist atmosphere they will continue growing, instead of having their wood well ripened by autumn. Plants in this condition and all in active growth should be liberally supplied with water, and those that have been in their pots for some years may have weak stimulants. Those intended to flower again should have little more than greenhouse treatment. Keep them on the dry side at their roots—in fact, if they have completed and fairly well matured their growth water may be withheld until the plants flag. This will quickly have the desired effect of bringing them to rest.

Caladiums.—If not grown in too much heat and now in healthy condition Caladiums may be gradually hardened and removed to the conservatory. They will last for some time in this structure provided too much air is not admitted directly upon them. These plants add considerably to the attractions of such structures at this season of the year.

Dracæna Cooperi.—This and other varieties that were raised from the root portion of the stem for various decorative purposes may now be placed in 5 and 6-inch pots, which are the most suitable sizes for them. After they are potted place Selaginella on the surface with a few pieces of Panicum variegatum intermixed. This adds to the appearance of the plants materially, and will last fresh considerably longer than if the surface is covered just when the plants are to be used. Grow these plants in a moist atmosphere, but where they can be shaded from the sun.

THE BEE-KEEPER.

WORK FOR THE MONTH.

The present year has been a season of grievous disappointment "Hope deferred maketh the heart sick," yet bee-keepers have continued to hope against hope until at last the month of July drawing to its close warns them that the year is speeding away and there is no further possibility of a surplus being obtained unless the stocks are in or can be brought into the proximity of Heather. Few bee-keepers will be suicidal enough, we hope, to neglect their stocks at this critical juncture. Every stock should be at once carefully examined, and there should be no delay in carrying out all neeessary manipulations.

Every stock in the apiary will require some assistance, and not a few will require some 20 lbs. of syrup in order that they may be in a fit state to brave the winter. Breeding must be encouraged, and consequently feeding must be resorted to; in fact in well-managed apiaries strong stocks have had food given them for some weeks past, and such stocks are consequently now crowded with young bees, and will be in a condition most favourable for wintering some two months hence. Queens will require to be examined, and those which seem to be under the mark must be destroyed and their place filled up with mothers of a younger age. This manipulation may, however, be delayed with some advantage until the young bees necessary for safe wintering have been reared, because by such delay we get the greatest part of this year's work done by the old queen, and then by introducing the young queen in September, no heavy call is made upon her until the following spring; we conserve, as it were, the energies of the queen upon which so much depends in the future at the expense of the queen whose work is almost done.

Food should not be administered too freely at the present time, but when stocks are absolutely in want a copious supply must be administered. There must be no spilling or messing about of the syrup, otherwise the apiary will soon be in an uproar, and great inconvenience will be the consequence. All feeding must be carried on at night, every feeder carefully covered, and all cases which contain syrup should be carefully stowed away in a place to which the bees cannot gain access. Supers and other extra room must be removed, and the apiary may now at once be got into winter quarters, save that no stocks should, in our opinion, be united at present, provided each stock has at its head a laying queen, because accidents may happen in the next few weeks which will make us glad of an extra queen, and also because in each stock young bees are being continually hatched out; and therefore, as in the next few weeks many old bees die of old age or are lost at their work, we have when the uniting is done a greater proportion of young bees than if the manipulations had been carried out at an earlier date.

All swarms must be returned to the stocks from which they issue, or they may be used in strengthening other swarms which have not made satisfactory progress; but the season is now so far advanced that few swarms will now be thrown off, many stocks being considerably weaker in numbers now than they were some three months since. Bee-keepers must not delay. Time is the essence of success. Each day is important, and the work of a single day may leave its mark on next year's success. Where brood is ejected no other sign is needed. The flag of distress is hoisted, and unless succour is given disaster is imminent to such a stock. A few shillings spent in the purchase of sugar now will be repaid tenfold in the future, and we must not forget that a cycle of good years have blessed us with plenteous harvests, and that therefore we should be the better able to withstand a season of adversity and disappointment.—Felix.

TO CORRESPONDENTS

All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Lilium giganteum (*T. T.*).—We should be pleased to see a photograph of your plant, as it is seldom this Lily flowers so satisfactorily.

Allamanda from Stopping to Flowering (*U. S. B. L.*).—With the shoots an inch or 2 inches long from the last pinching the plants may, if they are of a floriferous nature, be had in flower in six weeks, but much depends upon the condition of the plants.

Humea elegans (*Alec*).—The cold winds in May were one of the causes of this plant losing so much of its foliage, as we have plants 10 feet high with the same fault; but as they are flowering well at the top we must not object to their naked stems. Do not by any means cut it down.

Heating a Small Conservatory (*Mrs. B.*).—No stove without a pipe or chimney ought to be admitted among plants—it slowly destroys them. We had such a small conservatory once, and we heated it by a gas stove, but with a pipe to carry off the fumes resulting from the combustion of the gas.

Tuberous Begonias (*H. J., Birmingham*).—The Post Office authorities disregarded your directions, and the box arrived in a smashed condition without any letter. A few flowers remained in the corner of the box, and these are excellent examples of a double scarlet Begonia of good shape and brilliant colour.

Implement to Carry Large Plants in Pots (*U. S. B. L.*).—If they are too large for an ordinary hand-barrow they could be moved by means of two stout wooden rods or iron bars, one each side secured to a chain encircling the pot below the rim. Chains are sometimes used, furnished with large strong hooks at the side for fixing in the bars, or sometimes hooks are fixed in the wooden rods and then inserted in the chain. Several other methods of a similar character will suggest themselves to you on a little consideration.

Earwigs Infesting Climbers (*R. O. M.*).—These pests can only be successfully dealt with by trapping, than which for your purpose few things are better than Broad Bean stalks cut into lengths of 5 or 6 inches, and placed horizontally in different parts of the trees or plants. The hollow stems of Hemlock, Sunflower, and Jerusalem Artichokes are equally applicable. The traps should be examined every day and the earwigs blown out into scalding water. Earwig traps, which may be had of most nurserymen, will prove effectual if well attended to. The climbers may be syringed with a solution of softsoap, 2ozs. to the gallon of water, adding a pint of tobacco juice, which will make the plants distasteful to the pests but will not kill them. Perseverance in trapping is the only remedy we know.

Lawn Weedy (*T. R.*).—You propose to pare off the turf as thin as possible, then fork it over, picking out the Dandelion roots, give a dressing of artificial manure and sow the best lawn grass seed, and this is a capital plan, but we should not confine the picking to the Dandelion but extend it to all perennial weeds, and repeat the forking so as to thoroughly cleanse the soil of the roots of the weeds. The seed may safely be sown in the second week in September, and if you could afford a dressing of short but not very much decayed manure in early November, it would assist the grass through the winter and insure an early and good growth in spring. A cleanly and good tilth is of primary importance, and it is necessary that the seeds be sown sufficiently early in autumn to insure a good growth before winter, or if there is not time to effect it sowing would be best defered until spring. We have sown grass seed up to early October with satisfactory results.

Ornamental Trees and Shrubs for Filling up Shrubberies (*E. A.*).—Robinia inermis, Ailantus glandulosa, Almond, Amelanchier Botryapium, Bird Cherry common, and Virginian, Double-blossomed Cherry, Chestnut (double red, pink or scarlet, and yellow); Cotoneaster frigida, Laburnum vars, Liquidambar styraciflua, Crab, Japan, &c.; Maple, Variegated, Ash-leaved, and Red Colchic; Mulberry, black; Plum Myrobalan, White Beam, Mountain Ash, and Double Thorns in variety. Those are trees or semi-trees. Shrubs:—Aucuba japonica, Berberis Darwini, Box, Handsworth and variegated; Broom, Spanish and White; Cotoneaster Simmonsi; Elder, New Golden, Guelder Rose, Kerria japonica, Laurustinus; Lilac, vars; Philadelphus grandiflorus; Privet, Chinese, and latifolium novum; Spiræa ariæfolia, Sweet Briar, and Double Whin. Write to Low, Marston & Co., Fetter Lane, E.C., respecting the books mentioned.

Vine Spurs (*D. W.*).—In the house referred to the spurs, owing to the strength of the laterals and the size of the leaves, ought to have been about 15 inches apart along each side of the main rods, or in other words, the Vines, if 18 feet long, would be adequately furnished with twenty-four laterals, twelve on each side, for bearing fine Grapes. The best Grapes produced near the town in which you reside were from Vines the laterals of which were more thinly disposed. We have seen a Vine this week with the laterals more than 18 inches asunder (some 2 feet), the bunches of Grapes ranging from 4 lbs. to 7 lbs. each. Root action does not depend on the number of leaves and growths, but on their quality. All Vines are not alike, and possibly 15 inches between the spurs might suffice in your case, but nine persons out of ten err by overcrowding the foliage. Your suggestion respecting the Orchids shall have our attention.

The White Beam Tree (*M. N.*).—The tree of which you require the name and uses is the Pyrus Aria of botanists, and is commonly known as the White Beam Tree, in reference to the white under surface of the leaves. It is a native of Britain, chiefly in the mountainous districts on limestone soils. Its fruit is acid and astringent, but is not disagreeable to eat when in a state of incipient decay, like the Medlar. When dried and reduced to powder it has been converted into a sort of bread during times of scarcity both in France and Sweden; and when fermented it forms a beer, or, by distillation, a powerful spirit. It is greedily eaten by birds, for which reason the trees are ordered to be preserved in French forests, that the number of birds may be increased, in order to keep down the insects. The fruit also furnishes food to squirrels, and when it drops, deer and the hedgehog eat it with avidity. The wood is very hard, of a fine close grain, yellowish white, and susceptible of a high polish. It may be stained of any colour, and is much used in making handles of knives and forks, wooden spoons, and for musical instruments, and various articles of turnerywarc.

Budding Manetti Stocks (*B. T.*).—The stocks being in rows earthed up like Potatoes, take a hoe or spud and remove the earth from the stock, so as to insert the bud as low as possible. When this is done proceed to cut the bud just the same as you do for the Briars, and make an incision as low as you possibly can; the lower down the better, as the fewer will be the suckers—indeed, you should almost bud on the roots, if possible. At any rate, strive to insert the buds as low as you can. Only insert one bud in each stock. Choose the same side of the stock all down the line, and also select a place as free from knobs or irregularities as you can find. Make the incision in the form of a T, and when the bud is safely in tie up well beyond each end of the bud with rough cotton or worsted. Ladies often use wool, and nurserymen, bass or raffia or cotton. You must not replace the earth, but leave the bud showing, or rather the cotton, so that in the course of a week you can see whether the bud has taken or not. If it has not bud the other side of the stock. Do not touch the Manetti shoots, but leave them to grow as luxuriantly as they will till the following spring; then remove the cotton and cut back the Manetti to the bud. The best time for budding the Manetti is after rain, and if you have no rain give the stocks a copious watering, and you will find the bark run. August is the best time for budding Manettis. All the varieties you have named do well on the Manetti; in fact, all Hybrid Perpetuals except La France, which, having some Tea blood, never does so well on this stock as on the Briar.

Galls on Lime Leaves (*Hortus*).—The samples sent are what have been popularly called Lime Leaf Nail Galls, attributed to a gall mite named Phytoptus Tiliæ, though it is uncertain whether under this name more than one species may not be included. Upon their first appearance these galls are green, then they become yellow, this passes into red, next they are purplish, and finally brown. Their history is interesting, since the Lime was observed to be thus infected more than 150 years ago by the celebrated naturalist Reaumur. He was, however, much puzzled by them, and discovering in some of them a solitary larva, he supposed they were produced by a kind of fly or beetle. If he was right in his observation such larvæ could only have entered in order to prey upon the mites such galls may contain, for they are not attributable to other insects. So small and transparent are these mites that it is difficult to find them, and the plan generally adopted by naturalists is to wash them out with water, and then examine the liquid. On opening one of these galls it mostly appears to be full of hairs of a peculiar growth caused by the punctures of the mites. It cannot be said that the history of these galls is as yet properly elucidated, and it is maintained by some that the mites which they commonly contain are not the real parents of the galls, but "inquilines," or after tenants. Nor can we say how it is that of two trees, seemingly growing under the same conditions, one will be found swarming with galls, and the other almost as entirely free from them.

Large Mushrooms (*F. H. G.*).—The Mushroom reached us in an extremely uninviting condition, but it is evidently Agaricus arvensis, which is occasionally found as large as the specimen sent—namely, a foot in diameter. It is nearly allied to the common Mushroom, so nearly indeed, that it is scarcely better entitled to rank as a separate species than the varieties pratensis and silvicola are; but it is accounted distinct

by many authors. The Horse Mushroom has a dome-shaped pileus, bell-shaped in youth, and expanding in maturity, generally of a pure white colour and cottony texture, but losing its downy appearance in age; and a veil consisting of a double membrane, thick, woolly, falling from the edge of the pileus, and hanging loosely round the stem; the gills are free, pale pinkish brown, becoming darker as they grow older; the stem is cylindrical, the cavity filled with cottony pith. The flesh turns yellow when bruised. Occasionally the pileus is tinged with brown. It attains a large size. Authorities are at variance as to the manner of its growth. Mr. Berkeley describes it as growing in rings, and Mrs. Hussey does not number it among those addicted to circular growth. When it does grow in rings they are of a very large size indeed, and as they are seldom perfect it is easy to overlook the relation which one group has to another. Fields and woods are the habitats of this Mushroom; those growing in the former are the most wholesome. They should not be taken in the button stage like the A. campestris, but are in perfection just as the veil has broken away from the pileus, and the bell-shape is merging into the dome. In this stage, and later if free from larvæ, the Mushroom is excellent fried or stewed, and for this purpose is sold in Covent Garden Market. It is one of the best Mushrooms for making ketchup, its large size being a great desideratum in this matter.

Trees for Small Orchard (*Mulberry*).—We presume your proposed orchard is really to be a fruit garden, the ground not being under grass as in orchards generally. In the case of a fruit garden, pyramid, bush, espalier, and cordon are the best trees. Standards are only suitable for culture on grass where the ground under and between the trees and rows can be utilised for crops that are not required in private establishments to the extent they are produced by the large culture system. Espaliers are extremely useful from a sheltering point of view. We should advise a line to the north and on the east and west sides of the plot, 6 feet high above ground, the wires 10 to 12 inches apart. These we should cover with the hardier Apples, so as to form a strong screen for sheltering the other parts of the plot. The ground may be further divided into plots by lines of espaliers running north and south so as to still further break the force of winds, and these may be used for cordon-trained trees. The intervening spaces or quarters will be available for bush and pyramid trees. A cordon orchard or fruit garden is simply delightful. The diagonal cordon tree may be planted 2 feet or even 18 inches apart, but the larger distance is best. The lines of bushes or pyramids should be 7 feet 6 inches from the espalier lines, which will allow of ample space for cultural operations. Apples should be grafted on the English Paradise stock. They may be planted 4 feet 6 inches to 6 feet apart, the lesser distance for bushes and the larger for pyramids, Pears should be grafted or budded on the Quince or double-worked in the case of those that do not succeed on the Quince. They require about 18 inches more space than Apples. Plums should be planted 7 feet 6 inches apart, and if they grow too vigorously they should be lifted early in November. Plums are best trained as pyramids. Bushes may be planted 4 feet 6 inches, and pyramids 6 feet apart. Duke and Morello sections succeed on the Mahaleb stock. Bigarreau Cherries should be double-worked. For the espaliers, if you do not have cordon trees, dwarf-trained trees should be planted 12 to 15 feet apart, Pears 12 to 15 feet, Plums 15 to 20 feet, and Cherries the same as Plums.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. G.*).—Zenobia speciosa var pulverulenta. (*W. K. R.*).—1, Epilobium angustifolium; 2, Lythrum Salicaria; 3, Centaurea montana; 4, Convolvulus mauritanicus. (*J. H.*).—Very poor varieties of Sweet Williams, much better are frequently seen.

COVENT GARDEN MARKET.—July 25th.

OUR market has been very active the last few days, large supplies of soft fruit reaching us, prices being fairly good.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	0	0	to	0	0
Cherries, ½ sieve	5	0		8	6
Cobs, 100 lbs.	0	0		0	0
Currants (Red), ½ sieve	2	0		3	0
,, (Black), ½ sieve	3	0		3	6
Grapes, per lb.	1	6		3	6
Lemons, case	10	0	to	15	0
Oranges, per 100	4	0		9	0
Peaches, dozen	6	0		12	0
Pears, dozen	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb.	0	6		1	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0
Asparagus, bundle	0	0		0	0
Beans, Kidney, per lb.	0	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	0	0		0	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	0	0		0	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Heros, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	1	3
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
New Potatoes, per cwt.	8	0		14	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		8	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	6		0	10
Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0
Arum Lilies, 12 blooms	2	0		3	0
Asters, French, per bunch	2	0		2	6
Azalea, 12 sprays	0	0		0	0
Bouvardias, bunch	0	6		1	0
Calceolaria, 12 bunches	4	0		6	0
Camellias, 12 blooms	0	0		0	0
Carnations, 12 blooms	1	0		3	0
,, 12 bunches	4	0		6	0
Cornflower, 12 bunches	1	6		3	0
Daisies, 12 bunches	2	0		4	0
Delphinium, 12 bunches	2	0		3	0
Epiphyllum, 12 blooms	0	0		0	0
Eucharis, dozen	3	0		6	0
Gardenias, 12 blooms	1	6		4	0
Iris, 12 bunches	0	0		0	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium candidum, per bunch	1	0		1	6
,, 12 blooms	0	6		0	9
Lilium longiflorum, 12 blooms	2	0		4	0
Margnerites, 12 bunches	2	0	to	6	0
Mignonette, 12 bunches	2	0		3	0
Pansies, 12 bchs	1	0		3	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	4		0	6
Pinks, various, 12 bunches	2	0		6	0
Polyanthus, 12 bunches	0	0		0	0
Pyrethrum, doz. bunches	3	0		6	0
Roses, Red, 12 blooms	0	9		1	6
,, (outdoor), 12 bchs	2	0		6	0
,, (indoor), dozen	0	6		1	0
,, Tea, dozen	1	0		2	0
,, yellow	2	0		4	0
,, (Moss), 12 bunches	4	0		9	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	1	6		3	0
Stocks, 12 bunches	4	0		6	0
Sweet Peas, dozen	3	0		6	0
Sweet Sultan, 12 bunches	2	0		6	0
Tropæolum, 12 bunches	1	0		2	0
Tuberoses, 12 blooms	0	6		1	0
White Gladiolus, 12 sprays	0	6		1	6
White Lilac, per bunch	0	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0
Calceolaria, per dozen	4	0		9	0
Cineraria, dozen	0	0		0	0
Coleus, dozen	3	0		6	0
Crassula, dozen	9	0		18	0
Deutzia, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen pots	3	0		9	0
Genista, per dozen	0	0	to	0	0
Heliotrope, dozen pots	3	0		6	0
Ivy Geranium	3	0		6	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	0	0		0	0
Lilium Harrisii, doz. pots	12	0		21	0
Lobelia, per dozen	3	0		6	0
Marguerite Daisy, dozen	6	0		12	0
Mignonette, per dozen	4	0		8	0
Musk, dozen pots	2	0		4	0
Myrtles, dozen	6	0		12	0
Nasturtiums, per dozen	3	0		6	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		12	0
,, scarlet, doz.	3	0		6	0
Spirea japonica, doz.	6	0		12	0



LESSONS FROM PRIZE FARMS.

That the Royal Agricultural and kindred societies have done and are doing much for the improvement of agriculture, is an acknowledged fact to which due recognition is accorded by all sensible people, and in nothing have they done better than in the prize competition for farms. Sound practical men of mature experience are selected as judges, and the work of inspection is thorough and exhaustive. Much good is done by such competitions, both to the managers of the farms and to those who see the results of their practice or read the lucid reports of it given in the journals of the different societies. Year after year have we read these reports with keen interest, and from the first the feeling has grown upon us that the lessons taught by them were of vital importance to farmers generally. Let not anyone suppose that the prizewinners are exceptionally fortunate men whose lines have fallen in model farms and soil of superior staple. On the contrary, many, if not most of them, have had many difficulties to overcome by dint of downright hard work, the outcome of energy combined with intelligence.

Take, for example, the first prize farm of the recent contest near Nottingham. It is much exposed, with little or no shelter for live stock; the soil is light, dry, and so sandy that the surface is often blown about by the wind. It contains much silica, part resting upon new red sandstone and part upon magnesian limestone, and is altogether difficult soil to maintain in high condition. All the more credit is therefore due to Mr. Machin for winning the premier prize of £100. But then the prizewinner and his family are all remarkable for intelligence, energy, perseverance, and mechanical ingenuity. We are told in the report of a covered yard erected at a cost of 2s. 7d. per square yard, of manure made so well in it that clear proof of its excellence was afforded by the crops for which it had been used. Of the superior convenience of other buildings; of the clever adaptation of machinery to special purposes; of superior farm produce; of well-kept hedges; of

every foot of space upon the land being turned to account, either for main or catch crops; and of profitable poultry keeping.

Turning to reports of other farms in other competitions, we are told of well-farmed pasture in good herbage, free from noxious weeds, and in good heart, on soil and subsoil gravelly and light. Of a profitable system of management of dairy cows, under which only very fine cows recently calved or near calving were purchased, fed well, kept only so long as they yielded a full flow of milk, and then passed on to the butcher in ripe condition for killing. The dietary in this case consisted of hay, turnips, pea meal, maize meal, or other cereal food of good quality mixed with brewers' grains, cut chaff steamed and seasoned with sugar or molasses, the practice being to watch the markets and food which was cheapest and best. On another farm each cow had 6 lbs. of barley, or 3 lbs. of barley and 3 lbs. of maize meal per cow, with hay and turnips, alternating with 7½ lbs. barley, 21 lbs. of hay, and 42 lbs. of turnips. Another mixture used on this farm which was described as both satisfactory and economical, consisted of

	£	s.	d.	
Two tons of coarse barley at	3	5	0	per ton.
One ton best barley meal at	5	10	0	,,
One ton wheat sharps at	4	10	0	,,
One ton oatmeal dust at	1	10	0	,,

The cost of this mixture was 5½d. per 14 lbs., or £3 13s. 4d. per ton. Cotton cake was not used at all. Cows had often been lost from milk fever when it was used, but none had been lost since it was given up. We may remind our readers that the different sorts of food mentioned were used for cows kept solely to produce milk for sale, and not for cheese or butter.

In other of the reports we find mention of the adaptation of farms to surrounding circumstances; of the profitable growth of fodder for use in its green state and for hay; of town stable manure used profitably for suburban farms; of the culture of farm produce of all kinds for special local requirements; and above all of successful results achieved throughout the depression. In every instance the farm and its duties were the sole interest of the occupants. We are told of Mr. Joseph Lambert of Whickham that he and his wife had their hearts in their farm and in its success They fed their cows liberally, cared for them almost as for their children, and spared neither thought, labour, nor outlay to make them profitable. It was this gentleman of whose big white cow Beauty we are told that in 1887 "she had not been dry for nine years, but had milked continuously, and given as much as thirty-six and thirty-eight quarts of milk daily, keeping to this quantity for four months after calving, and never going below nine or ten quarts per day. She had had a calf every year for seven years, but only one in the last eighteen months. She was then nearly blind, but in good health. She was a great feeder, and would eat nearly as much as two cows."

WORK ON THE HOME FARM.

Glad indeed were we to note an improvement in the weather, and the haymaking has been going on briskly. A rising barometer and clear sky gave fair promise of a continuance of fine weather, and a consequent considerable reduction in the expense of haymaking, as well as much improvement in the quality of the hay. So far we have sustained no serious loss from spoilt hay, nor has there been any risk of fire from excessive fermentation. There has been a high temperature in each rick, and this is especially desirable to impart flavour when much rain has fallen upon mown grass. Under careful management so-called spoilt grass from exposure to rain becomes sweet and palatable. The one evil for which there is no remedy is mouldiness, which arises from carting hay that is damp or insufficiently harvested.

Bright hot weather now is also much required for the corn. We have seen some magnificent crops of Wheat, Barley, and Oats since writing our last note, and have had pleasing evidence that more attention is being given to the selection of pure seed. The Barley consisted of remarkably well-developed Chevalier and Beardless, the latter being especially recommended for deep rich soil or heavy land, and the former for general cultivation. The Wheat was a popular selection of Squarehead, termed Squarehead's Master, which is really a pure and fine sample of Squarehead. "There!" said the farmer, "that is a fine break of Wheat," and we entirely agreed with him. It was in one large field of fifty-two acres; the crop was thick on the land, with fine bold ears of large grain, the straw of that robust growth peculiar to Squarehead, and of a uniform height of about 4 feet. To anyone who thinks Wheat-growing is dying out in this country, we say, Go and see such a crop, and conviction must follow that under such high culture Wheat-growing is still profitable. All corn has wonderfully improved, notwithstanding the low temperature of the first two weeks of the present month, and none more so than Winter Oats, which were never finer either in straw or grain, but they will not be ripe enough for mowing till August, nor will Rye be ready till the end of the month. As a late harvest is now inevitable we shall employ a few more men than usual on every farm. The expense will be the same, as the work will be over in less time if only the weather prove favourable.

BRITISH-GROWN TOBACCO.

THE report of the Judges appointed to determine the award for the prize of 50 guineas offered by the Tobacco section of the London Chamber of Commerce for the best specimen of British-grown Tobacco was circulated on Saturday. The Judges were Dr. J. Bell, F.R.S., Somerset House; Professor W. Fream, LL.D., College of Agriculture, Downton, Wilts; Dr. J. Augustus Voelcker, Mr. Henry F. Moore, Frome, Somerset; Mr. W. H. Wills, Mr. James Biggs, Mr. Louis Morris (Tobacco Manufacturers), Mr. Algernon Gilliat (Merchant), Mr. James Chambers, Mr. G. H. Ball (Tobacco Brokers), and Mr. C. A. Müller (Tobacco Importer). The conditions originally laid down by the Tobacco trade section of the Chamber when the prize was offered required that each specimen submitted for the competition should consist of a not less quantity of Tobacco, grown on a commercial scale, than 400 lbs. in weight. It was also stipulated that each sample should embrace an average of the crop grown, and that such particulars should be given by the growers as would assist the Judges in making "a report on the yet doubtful question as to the possibility of growing Tobacco in Great Britain such as in quality relatively to price can compete with that of other countries." The various entries of Tobacco, numbering eleven in all, were duly inspected by the whole of the Judges on May 14th at the Fenchurch Street Warehouse. It was found that only four exhibitors had complied with the conditions of the competition so far as quantity was concerned; but, in view of the interest which is being manifested in regard to Tobacco-growing in the United Kingdom, the Judges considered it desirable to present a supplementary report on the remainder of the specimens, though not properly coming with the scope of their adjudication. They placed the four exhibits submitted to them in the following order of merit:—First, Messrs. James Carter & Co.; second, Mr. W. L. Wigan; third, Sir Edward Birkbeck, M.P.; fourth, Mr. John Graves; and they recommended that the prize of 50 guineas should be awarded to Messrs. James Carter & Co. Detailed particulars, furnished by the growers, as to the cultivation and preparation of the Tobacco sent in for competition are given, together with remarks of the Judges on the various exhibits. Closing their report with certain "general observations," the Judges state that, speaking generally, "not one of the four samples eligible for the prize was in any respect valuable for trade purposes, or even merchantable, presuming that no duty was chargeable upon the article. Still, it was evident that well grown Tobacco-leaf can be produced upon English soil, though, of course, this admission in no way takes account of the cost of production. . . . With regard to the prospects of Tobacco-growing on a remunerative basis in England, we share the opinion that, even under the most favourable conditions possible, such a crop cannot be made to pay, and that in most seasons it must be an absolute failure and heavy loss. The climate of this country, to begin with, is less favourable than that of Kentucky or Virginia, and the cost of production will be found far greater here than in the United States. Until the curing of Tobacco is perfectly well understood in the United Kingdom the finest leaf that can be grown will be absolutely wasted and useless."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. July.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 15	29.816	57.5	55.3	E.	57.1	66.6	54.4	75.1	55.4	0.3.9
Monday..... 16	29.481	63.1	59.0	S.E.	56.7	67.8	54.6	114.4	55.1	—
Tuesday 17	29.471	62.3	57.7	E.	56.9	69.0	48.9	102.7	46.5	0.960
Wednesday.. 18	29.516	62.9	58.9	N.E.	57.1	68.0	55.4	92.3	53.3	0.075
Thursday.... 19	29.827	58.7	56.4	N.	57.2	72.7	55.2	119.3	54.6	0.172
Friday 20	29.927	60.4	58.9	S.E.	57.6	67.4	52.4	94.7	50.2	0.072
Saturday 21	29.915	61.3	55.9	N.W.	57.7	68.2	55.7	109.5	54.5	—
	29.708	60.9	57.4		57.2	68.1	53.8	99.3	52.8	1.616

REMARKS.

15th.—Wet all day, thunderstorm at night.
16th.—Generally cloudy and threatening, with occasional spots of rain.
17th.—Bright and fine till 10.30 A.M., then cloudy, with haze in afternoon, getting unusually thick about 5 P.M.; very heavy rain, with some lightning and thunder from 6 P.M. to 6.30 P.M., and wet evening.
18th.—Dark and threatening morning with frequent spots of rain; frequent thunder in afternoon, with showers, fair evening.
19th.—Overcast till 11 A.M., then fine and bright with the exception of a slight shower about 2 P.M., and heavy rain from 5.20 to 6.20 P.M.
20th.—Wet till nearly noon; fair afternoon and evening.
21st.—Fine, with occasional sunshine.

A damp and rainy week, with frequent thunder. During the storm on the 17th the rain fell for some minutes at the rate of 4 inches an hour.—G. J. SYMONS.

THE POTATO DISEASE.

PRACTICAL immunity during recent years from the scourge that for a long time wrought such havoc amongst the most important of all root crops, led to the hope, somewhat widely entertained, that the destructive murrain was stamped out. We were never sanguine on this point, and have more than once intimated the possibility, or rather probability, of its reappearance when the conditions became favourable for the growth of the fungus on the leaves of the plants. It is only natural and reasonable to suppose that the absence of the disease for three or four years must have lessened materially the number of spores of the Peronospora ; but no one appears to know how long the resting spores retain their vitality, though it is well known that when they germinate, and wet and warm weather prevail, the parasite increases with alarming rapidity and speedily ruins the crops in which it becomes established.

Having a clear remembrance of the first great outbreak of the Potato disease in 1845 we have watched its course, its ebbing and flowing, with much interest ever since. Broadly speaking, it comes with wet seasons and increases in proportion with the continuation of the rain and dull weather, influenced considerably by temperature ; and during hot and dry summers it is scarcely seen. The summer of 1845 was like that of 1888. In a large Potato-growing district the ground was saturated and water stood between the Potato rows in gardens and fields. The early part of the season was cold, but the temperature rose towards the end of July, thunderstorms were frequent, clouds heavy, and the Potato growths seldom dry. The fields were like a reeking swamp, and then came the outbreak. No one knew what it was, nor how or whence it came. To this day the latter part of the problem remains unsolved, but the microscope under the eye of keen observers revealed the former. We know what the disease is now, but we do not know its origin or the agency by which it was introduced forty-three years ago. Many theories have been advanced on the subject, but one has conflicted with the other so notoriously, and each in turn been upset by facts, that not one of the said theories has met with anything like universal acceptance. It is of little use speculating on that point ; but it is both interesting and serviceable to note the fluctuations of the visitant—its periods of activity and its terms of rest.

In what may be termed the early history of the disease there were years of comparative, and occasionally of almost absolute, immunity from its attacks ; and these were again followed by years of virulency. The soundness of the crops for two or three consecutive years led many growers to suppose the enemy was banished. It was thought the fungus spores could not live for more than a year or two ; yet when the constantly dull, wet, and murky summer periods came again the disease came with them, no matter how long it had been absent. The sequel of the sudden springing into life of the destructive parasite that was fondly thought to have spent its course, was revealed by Mr. Worthington Smith's great discovery of the resting spores of the fungus, which, phœnix-like, ever and anon would start up as if from its own ashes. After these were found we could feel no security ; but experience has taught valuable lessons, which the public was slow to learn, whereby it was shown to be in the power of cultivators to materially reduce the injury that the enemy was capable of inflicting, by raising barriers against its inroads.

When the fungus first took possession of Potato plants, poisoned the sap, and ruined the tubers, it did then what it has done since and is doing now—attacked the soft-stemmed, thin-leaved, and weaker growers first, the stronger, stouter leaved, and upright growers alone escaping. Some popular dwarf-topped varieties that were much grown when the murrain first appeared were soon exterminated, only the coarser sorts, grown chiefly for pigs, surviving. It is true the dwarf-growing Ash-leaf sorts remained, but that is because of their early ripening, the haulm dying before the fungus spores were prevalent ; still there have been a few seasons when the weather was such as to call the enemy into action earlier than usual, and then the Ash-leaved varieties became a mass of corruption, or were only saved by digging them up before they were ripe, or promptly pulling up the haulm the moment the first disease specks were seen. Many old cultivators know that is the fact, and they know also that as a rule the disease does not set in with persistency till towards the end of July or in August, and then only when the weather is similar to that we are now experiencing—excessive wet, little or no sun and wind, and a damp, heavy, oppressive atmosphere.

We have within the past few days seen large patches of fungus-stricken Potatoes in gardens and allotments, and more than that, have purchased tubers in markets half of which were more or less "tainted." Growers of early sorts finding the crops affected are forcing their sale. It is the old practice over again, and unmistakeable evidence of the presence of the murrain. One of those growers informed us to-day (July 30th) that his "Hebrons" were "going bad," so he had marketed them, except some rows he had left for seed on the chance of their escaping, but he expected most of them would "go." He was urged to take them up at once, but demurred on the ground that as the skins were not set the tubers would shrivel and be of no use for planting. That is an ancient fallacy exploded years ago, and on his being assured of this he hastened home to take up the remnant of his crop and spread the tubers thinly in a shed to dry, not in the sun (if any). When this cannot be done, pulling up the tops, if done soon enough, will save the crop, but cutting them off will not, because the fungus takes possession of the stumped back stems above ground, penetrating to those below, for the tubers are only underground stems called by another name. All early Potatoes should be examined now, and if they are seen to be attacked they should either be taken up at once or the haulm pulled and cleared away. This can be done without dragging up the tubers if they are grasped between the feet standing on the rows, and the tops drawn with a sharp jerk.

A number of varieties of Potatoes are on trial at Chiswick. Calling there on Tuesday we asked Mr. Barron if they were free from the murrain. His reply was in the affirmative ; and he made the further remark that the 29th of July was the "fatal day"—the date on which he had for several years first noticed the fungus. We had not known the date fixed before, but it is doubtless near the mark. The varieties in the plot are mostly free to strong growers—the last to be attacked, and the most likely to escape, as some of them may. They were clean and healthy, and it was the 30th of the month. The "fatal day" was past ; but passing along a border more sheltered from the wind than the open plot is, the fungus was plain enough feasting on the tops of some Myatt's Ash-leaf. "It struck them yesterday," remarked the guide, "as we should have seen if we had been here." It is not unlikely. It was on the thin small leaves near the summit of the stems—the most vulnerable part ; the most resisting are the robust growers, with strong leaf power, that can keep the sap in a pure state by elaboration, and the thick cuticle is also the less penetrable by the parasite. Raisers of Potatoes from seed, ripened by vigorous English varieties of good constitution, have done much to impart confidence in the safety of a crop on which so much depends ; and a more intelligent system of seed selection and culture that have been fostered by competition, may stand the country in good stead this year. But for the extended planting of strong-constitutioned

varieties, and the cultural care exercised, the Potato crop would be in great jeopardy at the present time, and 1888 would probably have to be added to the disease years of the past ; as it is, we hope for a better record.

CABBAGES FOR SPRING.

EVERY garden owner tries to have Cabbages for the early spring, but all do not succeed, and this is why I am devoting a chapter to the subject. The Cabbage is a favourite vegetable in market gardens, aristocratic gardens, and with amateurs and cottagers. All that has been written on it would fill a large volume, but I venture to think that something can yet be said, and the subject is seasonable at the present moment.

It is often said of extensive classes of vegetables, such as Peas, Radishes, Potatoes, &c., that two or three dozen names do not represent more than half a dozen varieties ; but in my opinion this does not apply to Cabbages. I do not know a class of vegetables more distinct, and anyone growing from twelve to eighteen varieties, as I have done, can readily see that they vary much, not only in appearance, but also in the time they take to gain maturity. There are very short and compact-growing ones, of which Ellam's Early is the best type. Then we have medium ones and others which gain a great size with loose leaves before they heart. The latter are never early, but do well as second or third earlies where space can be devoted to them. Ellam's is undoubtedly very early, but it is rather too small to suit some growers. Early York, once a favourite Cabbage, is not in favour at present, and never will be again. It is too tall, and is very apt to "bolt" or flower before hearting. We have lost more of it in this way than of any other variety, and they differ much in this respect. We have had whole rows of some varieties run to seed prematurely, where others close to them were not in any way noted in this respect. All points considered we are greatly in favour of Webbs' Emperor as an early Cabbage. It has a capital constitution, it is medium in strength of growth, compact, produces a neat conical head, and is exempt from "bolting." We depend on it as a main crop variety. In the spring just past we tried amongst others a new American variety with high recommendations, but it turned out one of the most mixed and useless we ever had. It is cases of this kind that induce us to recommend growers to adhere largely to some well known and thoroughly tried sort. When you see a Cabbage produce many large loosely arranged leaves it may be concluded that it is not good for early spring, and only those which grow compactly from the first are likely to prove useful.

So much for varieties ; now for the time of sowing. Here we come to a question of the greatest importance. It will never answer to sow Cabbage seed early in July to make sure of the plants being ready in good time. Neither will it do to sow the seed very late in autumn ; indeed, chance sowings must be avoided, and the greatest attention must be given to particular dates. We have tried them at all times, from the last week in June until the middle of September, until we have ascertained without doubt that the last week in July and the first week in August includes the period when spring Cabbage seed may be most successfully sown. A day one way or the other does not make much difference, and very little attention need be given to sowing in north or south, as at this season young Cabbages will grow as fast in Scotland as they will in the south of England, and all Cabbage seed sown now will produce plants that will be in good condition by November. It is at that time their wintering begins, and if they are dwarf and robust then they are sure to be in good condition for heading in the early spring.

A half-ounce or 1 ounce packet of seed will produce sufficient plants to fill a large quarter. Indeed, either of these quantities would be enough for a cottager's or amateur's garden of the ordinary kind, and 2 ounces of seed would supply a large garden. The whole may be sown at once. Let the ground be well manured and forked, and sow in a bed about 4 feet in width. Do not put the seed in rows, but sow broadcast very evenly and not too thick, or when the plants come up in close masses they are apt to suffer before they are ready for planting out. A little soil should be thrown over the seed from the sides of the bed, and then beat it level with the back of a spade. The young plants will be through the soil in a week, and I have known birds pick them up at this time. They sometimes destroy a bed before one knows they have noticed it, and a little lime or soot should be sprinkled over the plants as soon as they appear. If this does not check them place a net over them, and keep it on until the plants are several inches high, and on no account allow the plants to fail from neglect, as if those fail that were sown at the proper time later ones would not be so suitable for the spring. I have known caterpillars destroy some of the plants too, and they must also be checked by hand gathering. In four or five weeks hence the plants will be ready for putting out in their bearing quarters, and selecting a proper position is of some importance. Remember they will be the earliest vegetable crop in the garden next spring, and they should have a very warm sheltered position. A moderately rich soil suits them better than too much manure, as this only forces them into a luxuriant growth in the autumn, which they cannot sustain throughout the winter. In fact, I do not like to see the spring Cabbages too large in November, and prefer them very sturdy and close in the leaves. They are best too when very dwarf, and when allowed to remain in the seed bed until they have stems about 1 foot in length is ruinous. Such plants are blown about in the winter time, and never succeed. Although I recommend that the seed be all sown at one time, the Cabbages may be planted at different times. We generally make three plantations ; the first as soon as the plants can be conveniently handled, the second three weeks afterwards, and the third early in the following spring. Should the weather be very variable the second plantation may be the best, or *vice versâ*. As a rule, we plant at a distance of 20 inches between the rows and 18 inches between the plants. They are put well into the soil, and the soil round each is trodden firmly, as they root much more freely and securely when in firm soil. Some plants may fail in the rows before the winter is over, and these blanks should be filled from the seed bed.—A KITCHEN GARDENER.

STATICE PROFUSA.

THIS Statice is one of the most useful of summer and autumn-flowering plants ; under fair cultural treatment yielding better results in the shape of a continued supply of bloom than can be had from most plants. As an exhibition plant its merits are well known, the same specimen, if kept in good condition, being available for show purposes from April or May until autumn. Its great merits as a house plant are not, I think, so well known, but according to my experience no flowering plants stand employment in rooms better. It occupies much the same position as Aspidistras amongst foliage plants for good behaviour under a long-continued course of room decoration.

The culture is so simple that it would hardly be worth while stating particulars were it not that, like all other plants, it shows a decided preference for little attentions, which make all the difference between securing good healthy plants and those that are not so presentable. Taking a cutting in spring (a side slip broken off a shoot is best) I find it root quite freely inserted among the sand in a propagating pit. Cuttings also strike readily in a stove inserted amongst the sphagnum in baskets of Aerides, &c. When well rooted place these into 3 or 4-inch pots ; a compost of turfy loam and fine cowdung suits them well in all stages of growth. Pot rather firmly ; keep the plants growing freely in a warm temperature, with plenty of water at their roots, and all flower growths pinched off as they appear. A shift into a 6-inch pot will be required during the summer, and if well treated the plants will commence flowering the following spring, and may be kept in good health in the same pots by means of surface dressing of manure for a few seasons. However, where young plants can be conveniently raised annually these will be better.

The main thing to be observed with these young plants is never to allow them to stop growing summer or winter until wanted to flower. A winter temperature of 50° to 55° is not too high for them. If specimen plants are wanted quickly continue shifting them into larger pots—a 9-inch size will suit them the second season, and an 11-inch the third, after which biennial shifts will do, or the plants may be allowed to remain in the same pot for several years.

The other cultural requirements are seeing that no flowers appear until specially needed, that the plant continues growing without check (though during winter only slowly), and to keep the foliage free from red spider, which latter sometimes attacks this plant. Our plants are freely watered, and during the summer and autumn months are supplied with manure. We cut spikes of flowers as wanted, and others are thrown up to take the place of those so removed. This plant will stand a low winter temperature, but it is not good for it ; the lowest is 45°, and in February a little heat is of the greatest advantage in securing a finely bloomed Statice throughout the season. It may be added that in repotting the plants the stem should not be buried, but, on the contrary, kept rather up from the soil.—B.

A DISASTROUS FRUIT YEAR.

THE present season may well have this term applied to it. I write from observation of a wide district and reports from others. 1887 was a splendid season for maturing fruit wood. Grand results were anticipated from this, but I fear in the majority of cases these

have not occurred. Pear blossom was very plentiful, and Pears are rather a good crop, but Apples did not bloom profusely, and the crop is much below the average, indeed, I fear it is the worst of all the fruit crops. Strawberries were promising at one time, but daily rains caused many of the fruits to decay before they could be gathered, and not a few decayed without ripening. Our crop was heavier than in the dry summer of last year, but it was far from good. Raspberries have been abundant, but very watery and flavourless. Red and White Currants are below their usual size, so are Black Currants, and all are deficient in quality. Many of the leaves are falling off the Red and White Currant bushes, and life is stagnant in all of them. Apricots are quite green and small as yet. Plums are not half grown, and Peaches in the open are not stoned. Last year I gathered Hale's Early on the last day of July, this year they will not be ripe by the 1st of September. The Alexander Peach was planted under the recommendation that it was so much earlier than Hale's, but at the present time it does not show this character. I am of opinion that a fine June and July are the months above all others from which good fruit of all kinds may be expected, and when these are ungenial a fine August or September fails to compensate for them, as the nights soon begin to cool, and the trees and bushes never regain full vitality. I have already put 1888 down as a failure as a fruit year, and I have no expectations of anything occurring to alter this. The worst of it is beginners in fruit culture are apt to be daunted by poor results, but I do not go so far as that; and when we have three or four good fruit years in succession, as we have had many times, we can overlook a failure or partial failure without much grumbling.—J. Muir.

THE POTENTILLA.

This showy hardy perennial is very useful for cutting from during the months of May, June, July, and August. It may be readily increased by transplanting or potting divisions of the roots or side shoots in the spring just as growth has commenced. The plant is not particular as to the situation or soil it is planted in, but the more favourable the conditions under which it is growing the better will be the results secured when the plants are in flower. A position fully exposed to the sun and a rich loam to grow in are conditions calculated to produce the best possible results. The plant may also be propagated in August from seed sown in shallow boxes filled with light soil, covering the same lightly, giving water through a fine rose, and placing in a close frame. When the seeds have germinated, prick the young plants out a few inches apart in boxes or a warm border when large enough to handle, preparatory to being finally transplanted into their flowering positions before they touch the boxes and nursery beds.—W. H.

VEGETABLES FOR EXHIBITION.

SETTING UP COLLECTIONS.

At the commencement of my exhibiting career vegetables, although largely shown, were the least attractive feature at the majority of shows; in fact they were not considered worthy of a very prominent position. Now-a-days, instead of being either outside the tent or underneath the side staging they receive much better treatment, and are by no means unattractive to the visitors. Much of this improvement is due to the superior manner in which they are staged, and there is no reason why they should not always hold an honourable position. Mr. G. T. Miles, Wycombe Abbey, was one of the first to take extra pains in displaying collections of vegetables to the best effect, and while he continued to compete no other exhibitor excelled him in this respect. The mere fact of the vegetables being set up to the best advantage will not alone insure their taking the first prize, bnt if they are of equal quality to the rest of the competing collections, superior arrangement turns the scale in their favour.

Where a staging is provided for the vegetables, these are usually either set up in dishes or are grouped on the boards, and in either case are more attractive than when shown in baskets. The exhibitor should provide himself with plenty of clean fresh moss and good Parsley, the former serving as a bed on which to raise and display the vegetables, while the Parsley should be neatly arranged so as to form a fringe, more of it being worked in wherever there are any openings for it among the various specimens. It is unwise to smother the vegetables with Parsley, this detracting from their size, and care should be taken not to use more than will suffice to set off the former to the best advantage. Do not attempt any extraordinary mixture or any fanciful arrangement, but let each dish or variety be kept well together. Scattered they are not nearly so effective, and their defects are only too plainly visible to the judges and onlookers generally. How they should be grouped ought to be decided before the exhibition tent is reached, and all can then be put up quickly and exactly where they are to remain. There need be no flurry, and no arranging and re-arranging of the collection, and those who cannot, or do not, avoid this, run the risk of being turned out of the tent before they have set up the collection to their own satisfaction, let alone to that of the judges.

Groups or dishes of Cauliflowers, Globe Artichokes, Onions, and Turnips are suitable for the back row; in front of these, and arranged so as to form a good contrast of colour, being Potatoes, Tomatoes, Carrots, Mushrooms, and Beet; while Peas, Beans, Cucumbers, Vegetable Marrows, and Celery are usually seen to the best advantage in front, all being arranged so as to form a good slope to the pathway. If the dishes are arranged just clear of each other fill in the spaces between either with good Parsley or rich green moss, this giving a finishing touch to the exhibit. Cover all with paper till such times as the tents are cleared for the judging, and on no account omit attaching both the names of the varieties and the class cards. The last proceeding of experienced exhibitors is to go round and see that the latter are all put on properly, many assistants, and even the responsible exhibitors, frequently contriving to muddle up the class cards (which only good-tempered or not over-worked judges will put right), disqualification being the consequence.

At many shows the prizes are offered for collections of vegetables in baskets, these dispensing with the necessity for putting up extra staging. This system of showing has its advantages, notably in the case of local exhibitors, who can arrange their baskets over-night, or, at any rate, before they leave the garden in the morning; but I much prefer to see vegetables set up on a staging as just described, and baskets or trays are a great nuisance to those who come from a distance. However, a basket of vegetables may be made attractive in appearance, and with a little ingenuity every variety may be shown off to the best advantage, though not if all are sunk into a basket several sizes too large. Nor should any kaleidoscope arrangement be attempted. Many exhibitors seem to think the right thing is to quarter out or divide their basket either with Cucumbers, Celery, and Potatoes, while others go in for circular combinations. Such baskets are confusing to the judges, who have a difficulty in finding the much-divided varieties, and the system, as before pointed out, is the surest method of showing up the defects of individual specimens. Flat baskets, such as plants are sent out in by nursery men, are the most suitable for the purpose, one about 3 feet in diameter usually being large enough for a collection of eight varieties of vegetables. These should be firmly filled with hay, this being faced over with green moss or Parsley. Each variety to be kept in a separate heap, the most showy, or, say, a good dish of Tomatoes or a bunch of Nantes Horn Carrots points upwards, being fixed in the centre, the Cauliflowers, Artichokes, and larger kinds disposed at the back, and the rest gradually brought round to the front. The weight of the vegetables will depress the hay sufficiently to admit of their resting safely without being actually below the rim of the basket, and with the aid of Parsley among the kinds and over the sides they will look really attractive. As these baskets are usually set on the turf, they ought to be slightly raised in front, and be blocked up, with the aid of inverted flower pots, much higher at the back. Always aim to produce a good first impression, as it is not lost upon judges, however keen they may be in ferreting out defects.

Much that has been written upon the arrangement of vegetables in baskets is also applicable to somewhat similar exhibits in trays, only in this case there is no necessity for using any hay, plenty of moss and Parsley being, however, indispensable.—Exhibitor.

MELONS CANKERING.

Dull sunless weather is altogether unfavourable to Melon culture, especially in unheated pits and frames, and we have had little else but this for many weeks past. Where plenty of fire heat has been turned on the Melon houses and pits the plants have succeeded surprisingly well, failures being no more frequent than in favourable seasons. They, however, need much closer attention in dull weather, care being taken not to saturate the soil in which they are rooting, a wet and cold heap of loam and old hotbed manure underneath invariably leading to a failure. In addition to watering carefully and the maintenance of a drier atmosphere than is advisable in dry hot weather, a close look up must be kept for any decay of leafstalks or canker in the stem. The oldest leaves, or those on the main stem of plants trained to roof trellises, are the first to go, principally owing to their being unduly shaded. If these are allowed to die slowly the stalks often become suddenly decayed, and in a few hours this spreads to the main stem, the whole plant soon becoming affected beyond recovery. The safest course to pursue is to anticipate this decay of the leafstalks. If

they are cut off close to the stem, the wound dried with a piece of sponge or some substitute, and then dressed with newly slaked lime, or, failing this, Portland cement, the dressing being renewed as often as found in a moist state, the wound soon heals. Any leaf-stalks allowed to become rotten close to the stem must be at once cut cleanly away, the wound dried and dressed with the lime. Sometimes it happens all the principal growths become suddenly diseased, and in a few hours the plants are a mass of decay. This usually happens to overgrown plants when there is a sudden change from hot to cold and sunless weather. It will also result from severe pruning or from a heavy watering. Plants thus affected are rarely, if ever, saved, and it must be prevented by an increase of fire heat and a drier atmosphere maintained.

Canker at the collar, or that portion of the stem from which the first or seed leaves spring, is undoubtedly the worst enemy to Melons, hundreds or perhaps thousands of plants being annually ruined by it. As I have previously pointed out, the surest way to ward off this disease is to keep the soil near the stems perfectly dry, and this, as far as my experience goes, can best be done either by planting rather high or by enclosing the stems with the aid of earthenware collars and glass to fit, as used by Mr. Pettigrew at Cardiff Castle. The plan adopted by Mr. Payne at the Wells Palace Gardens is also worthy of a trial. In this case the collars are actually buried. Mr. Payne informs me he has never lost any plants since he first tried this preventive measure, and others who may have tried it will perhaps give their experience. This may again be referred to at a more seasonable date, and I will now suggest what should be done with plants already affected by canker. During such a season as we are now passing through, or at any time when there is a sudden change from hot to dull weather, the collars and stems of the Melon plants ought to be examined once or twice every day, as a few hours' neglect may mar everything. Directly a wound is found with viscid matter oozing from it the latter should be cleanly scraped off, the sponge next applied, followed by repeated dressings with the quicklime or cement. It is quite useless to apply either silver sand or flowers of sulphur, as these are not at all caustic, and aggravate rather than remedy the disease. Nor is lime that has long been slaked or exposed to the atmosphere sufficiently effective. It must be either newly slaked or scraped from an unslaked lump. Half measures are quite useless, and unless the wound is thoroughly scraped clean and all decayed portions of the stem cut away healing will be out of the question. One of our heaviest cropped plants suddenly flagged badly, and as this was the first symptom of canker seen this year it had gone almost too far to cure. I found it necessary to cut clean through the centre of the stem, the very pith being decayed. The wound was scraped clean, dried, and dressed with quicklime, the plant also being shaded overhead. Strange to say, the healing was complete, and we had a double stem, which served to perfect the crop. Affected plants ought to be lightly shaded from bright sunshine, and also receive rather less moisture at the roots till such times as the cure has been accomplished.—W. Iggulden.

A WEEK'S WANDERINGS.

SWANMORE PARK.

A good deal may be seen in a week when the weather is favourable, but as during the short period under notice every other day was rainy, we were about half the time dodging the showers or resting. Our first halt was at Swanmore Park, in respect to which we once heard the lucid remark, "As Molyneux has nothing else to do but grow Chrysanthemums, and as somebody else grows them for him, he ought to win prizes." If we attempt to analyse that sentence we find ourselves involved in a curiously mixed paradox, for if "somebody else" finds all the knowledge and manipulation that produces the prize blooms, it is *not* Mr. Molyneux who ought to win prizes, but the mysterious man behind him; and if Mr. Molyneux has nothing else to do but what another person does, his duties must amount to nothing at all. Mr. W. H. Myers is a great lover of his garden, and one of the best of masters to his men; but he does not pay them for doing nothing. Judging by the appearance of his estate he is well served, and the good all-round work seen in his garden could not be done except by a competent and industrious man devoted to his charge. Mr. Molyneux was once in a "single-handed" place, and when there won one of the finest silver medals ever offered for a collection of Grapes at Manchester. So it would appear he could do something when he had nobody to help him, and he can do something still. Besides having a good grasp of the principles of gardening, and not lacking in the useful commodity of common sense, he possesses what the late Lord Beaconsfield considered one of the greatest elements of success in life—persistency of effort. Mr. Molyneux is not the man to count hours, but early in the morning and late at night he is on the spot when anything requires to be done, and, as one who knows remarked, "if he thought there was an earwig among his flowers in the autumn, he would not go to bed till he caught it, and many a night in the showing season he has had no bed at all." Proceed on right lines, then success is the outcome of attention to small details and persistent work.

The Swanmore Chrysanthemums are looking well this year, the majority of them perhaps better than usual, but there is a very instructive minority not looking so well. It is an experimental year chiefly with various manures. Fifteen different kinds, or compounds, are on trial, a certain number of plants being devoted to each, and as the varieties are grouped together the effects of the fertilisers are very apparent now. The trials will be carried out to the end let the results be what they may, and if there are good blooms at the right time they will probably find their way to some of the shows. Acquiring information, however, possibly for a future edition of the Chrysanthemum book, appears to be regarded as of more importance this year than concentrating resources in the production of blooms for exhibition. Wonderfully sturdy and vigorous are rows of Edwin Molyneux and Avalanche, the plants about 2 feet high, and stems as thick as a man's thumb. The tall growers, such as Belle Paule, Lord Wolseley, and others of the same habit, are from 6 to 8 feet high, and not frothy; the Queen family are from 5 to 6 feet high, with stems thickening out at the base and foliage clothing them to the ground; the leaves not "black," large, and flimsy in character, but stout in texture, and of a bronzy-green hue. "Not much the matter with them," the grower thinks. The chalk water and dry atmosphere on the breezy hill on which Swanmore stands have induced premature wood-ripening during previous hot summers, and to that is attributed the too narrow florets of several of the blooms; but there was no mistaking their solidity, depth, and high finish. This year the growth is ripening more steadily, and if increased size is imparted to the blooms, and their other characters are maintained, they will, to employ the showmen's phrase, "take some beating." That is enough on Chrysanthemums, and we will now step inside and see whether Mr. Molyneux has anything to do besides growing those plants.

A gardener has only to be a moment in the vineries to be satisfied that the Grapes are as good as the Chrysanthemums, especially in the late and Muscat houses, the Black Hamburghs not appearing to have recovered so well from the lifting, though they are bearing fruit of good quality. The roots in the inside borders were raised last autumn in all the houses, and it is astonishing how well the Vines in the two first named have done. The crops are splendid, those of Gros Guillaume and some Muscats remarkable, while better bunches of Mrs. Pince have rarely been seen; they resemble some fine examples I remember at Longleat, and others at Abberley as grown by Mr. A. Young last year. But the most imposing bunches at Swanmore are of Gros Guillaume. The Vine is pruned on the close-spur system, yet appears to bear as freely as the Black Hamburgh. The bunches, weighing from 5 lbs. to 7 lbs. each, hang at regular intervals from the bottom to the top of the Vine. How many cannot be remembered, but they will probably weigh in the aggregate 50 lbs. or 60 lbs. They are of excellent shape, and the berries are as fine as the bunches. The Muscat bunches, in the house devoted to that prince of Grapes, are full, heavy, shapely, with berries large and uniform. It is noticeable in those houses that the finest bunches hang from the lower half of the roof, some of the largest being quite at the base. This denotes good culture. "Big bunches" are frequently enough seen near the top of Vines, but dwindle down as the base is approached.

The Swanmore vineries are large and light, with hot-water pipes distributed at 4 or 5 feet intervals from the front to the path at the back, not piled all together next the front wall. The plan is undoubtedly good, and the Vines show they are suited. The borders are mulched with manure, roots bristling through the soil, and are treated to a supply of "Thomson's," which the Vines seem to relish. The laterals are thinly disposed, there being no crushing or crowding of the leaves, and they are allowed to extend as far as there is room for the development of the foliage and no farther—undoubtedly a common sense method of procedure. There has been no mistake in ventilation, no inrush of cold air through the front sashes early in the season, as if that had been permitted no such Grapes would be seen near the base of the roof. Front ventilation is indispensable at the right time, but is seriously abused in many houses to the detriment of the Vines and crops. Madresfield Court is well grown, the bunches not large, but berries good and well finished without cracking—an evil that can be averted by a proper system of ventilation. It is an excess of atmospheric rather than root moisture that is the most active agent in the cracking of Grapes. The grower of the Vines referred to has quite as much reason to be satisfied with them as he has with the Chrysanthemums outside, for he really has something to do with both, giving to them close personal attention.

We pass on in the same fine range through a gay plant house, in which the good old Trachelium cœruleum is seen to advantage, also Brugmansias, then enter a stove full of specimen Crotons and other plants getting too large for the space, with Stephanotis growing luxuriantly overhead, and which flowers abundantly; also pass in a vinery a number of Eucharises flowering for the third time this year; then in another house come to a blaze of Tuberous Begonias, the plants admirably grown, pausing in a Peach house to admire a Pine Apple Nectarine tree that can have few superiors. It nearly fills a house 30 feet long, the trellis being 13 feet wide, and is carrying a crop of about 500 fruits, regularly disposed from the base to extremity of the branches, and swelling to a very large size. It is a young tree, and as an example of culture is equal to the best Chrysanthemums ever grown. Table and room decorative plants are grown extensively and well, these being more acceptable for their purpose by the "surface plants," such as Fittonias, Pileas, Panicums, and others that are suitable growing in the pots, these having a much better effect than moss packed

on the soil. Melons and Cucumbers are grown with these plants, and it is astonishing how much is done with the limited space suitable for growing various kinds of plants.

The shrubberies are well stocked with a choice assortment of deciduous trees, Conifers, and evergreens, and lawns and walks kept in the best condition. A group of the Golden Elder and Purple Nut (Corylus) at the entrance is particularly effective, the former being cut back yearly, and in July the green points are picked from the young growths, the bushes themselves being a mass of clear yellow. It is surprising how greatly they are improved by the simple process of pinching in the summer. The most effective flowering shrub a fortnight ago was Philadelphus grandiflorus, densely covered with flowers much larger, purer, and less powerfully scented than those of the old Mock Orange, P. coronarius. The large-flowered variety might be planted more freely with advantage to the appearance of pleasure grounds in summer. The flower garden is rendered cheerful by variety—hardy herbaceous plants, subtropical mixtures, and carpet bedding being well represented. Tuberous Begonias are also remarkably well grown in masses, the beds surfaced with Sedum glaucum. This has a very neat appearance, and contrasts well with the rich flowers above, while it prevents the soil being dashed upon them during heavy rains, and arrests evaporation in hot weather, but in that respect was more useful last year than this. A rockery dell made a few years ago is now furnished, and is a charming feature of the grounds. It is worthy of description, but this cannot be given at the present time.

The crops in the kitchen garden are too luxuriant, the wet weather and strong soil forcing them out of character. The Red Currant bushes are worthy of special note. Six or seven branches have been chosen and summer-pinched as cordons; these extending some 6 feet long are densely clustered with fruit their whole length, and as there is a clear space of a foot or more between them, the crop is quickly and easily gathered. Gooseberry bushes are borne down with fruit, as usual, and are seldom pruned, but the bearing branches are thinly disposed, and the fruit is taken off in handfuls. It is not too much to say that everything attempted indoors or out is done well at Swanmore, and beyond the gardens Mr. Molyneux has planted about 250,000 trees during the past three or four years, so it will be apparent he has something else to think about and attend to besides Chrysanthemums. His assistants work under his personal instructions in all the departments, hence he holds himself responsible for the failure of whatever may be in hand, and correspondingly he must be credited with the success achieved, though he does not hesitate to speak approvingly of the good and willing services of his helpers. All appear to work well, cheerfully, and happily at Swanmore. It is felt that the head of all deserves their best efforts, as he is generous, appreciative, and kind.—A Wanderer.

BLUE GUM TREES.

The remarks of "F. H." at p. 77 in reference to the Blue Gum of Australia (Eucalyptus globulus) not being often met with in a flourishing condition planted out of doors in this country, induces me to say that one is growing in a border and trained up the wall of the south part of the Hotel Ilfracombe, in the picturesque seaside town of that name. The tree occupies a central position, is from 30 to 40 feet high, having a large trunk and a good spread of luxuriant foliage. I have also noticed several other Blue Gum trees of smaller size in different parts of Ilfracombe, and, if I remember rightly, in the village of Clovelly, ensconced on the face of a steep chasm in the seacoast 23 miles thence and 10 miles from Bideford. But if your correspondent will refer to the Journal for June 16th, 1887, p. 482, he will find that there is a much larger specimen than the one recorded above in the beautiful grounds at Whittinghame, Prestonkirk—nearly 600 miles farther north—and which is probably the largest Eucalyptus in Great Britain. The dimensions are—trunk, 10 feet 4 inches in girth; main limb, 5 feet; other two, 3 feet 7 inches each, and some of smaller dimensions; height, 60 feet. It may not be out of place to state that the soil at Whittinghame overlies the old red sandstone formation, the subsoil being mostly of sand or gravel; the atmosphere is consequently dry, and to this fact is attributed the immunity from severe frosts, and frost does not do the same amount of damage as it does in low-lying districts, where the air is more moist. Whittinghame is but a few miles from the German Ocean, its elevation being about 320 feet above sea level.—H. W. Ward.

HUMEA ELEGANS.

This half-hardy biennial is of graceful habit. It attains a height of 5 or 6 feet when well grown, the large fragrant leaves and feathery inflorescence being very telling in a border, the centre of a mixed bed, or mixed with less tall-growing plants on the centre stages of greenhouse or conservatory. The seed should be sown at once in a 6-inch pot or small pan filled with sandy soil. Cover lightly, water, and place on a shelf in the greenhouse with a piece of glass and a little moss over it. As soon as the little plants appear the moss should be removed. When large enough they should be pricked out in thumb-pots, one in the centre of each, using a mixture of light sandy loam and sweet leaf mould, three parts of the former to one of the latter; water through a fine rose. Place them near to the glass in a cold frame. Shade and keep close until the plants have recovered from the slight check which they experienced through having their roots disturbed. Afterwards they should be shifted into larger pots, as they require more room at the roots, and be grown on in a position near to the glass in a dry airy greenhouse.—H. W.



SOBRALIA LEUCOXANTHA.

At a recent sale in Messrs. Protheroe's Rooms, Cheapside, a plant of Sobralia leucoxantha from Messrs. Seeger & Tropp was sold for 30 guineas after a very spirited competition, "thus showing," as a correspondent remarks, "that good Orchids realise full value." This Sobralia, which is one of the most beautiful species in the genus, is very rare, and I have heard of but three good examples—the one recently sold, as already stated; a second, which is or was in the possession of Mr. Grose Smith, who is said to have refused 75 guineas for it; and a magnificent plant in Mr. R. H. Measures' collection at The Woodlands, Streatham. The last named has been flowering well this season, and its owner has kindly forwarded the



Fig. 10.—Sobralia leucoxantha.

flower from which the woodcut (fig. 10) has been prepared, but the drawing has been slightly reduced below the natural size.

In the flower sent the sepals were nearly 3 inches long and 1 inch broad, massive, pure white, and recurving. The petals were of similar length and breadth, slightly recurving, not quite so thick as the sepals, but very pure white. The lip is partially tubular, the tube 2 inches long, the limb rounded one-half to three-quarters of an inch across, and beautifully frilled, rich orange yellow in the throat fading to the margin, which is pure white; the base of the lip and the column are also white. The flower is very neat in form, the wax-like substance and purity being beautifully relieved by the dash of orange in the lip.

The plant is dwarf in habit, the slender stems 1 to 2 feet high bearing plicate leaves like those of other better known Sobralias, and the flowers are clustered near the apex of the stem. It is related to S. macrophylla, but must not be confounded with S. xantholeuca, also a rare, valuable, and handsome plant, bearing pale yellow flowers.

CATTLEYA SCHOFIELDIANA,

Also from The Woodlands, I am favoured with handsome flowers of this extremely distinct Cattleya, which in a genus remarkable for its variety of floral form and colours stands out very conspicuously. The flowers now on my table are nearly 7 inches in diameter across the outstretched petals, the diameter from the top of the upper sepal to the lower being nearly as much. Both series of divisions are of a peculiar tawny yellow freely dotted with crimson purple ; the upper sepal over 1 inch broad, straight and erect, the two lower shorter, broader, and curved inwards. The petals are narrow at the base, undulated at the margin, and 1¼ inch broad towards the lip. The lip has two lateral white lobes closely folded over the broad yellowish column, the central lobe being 2 inches long, narrow at the base, yellow streaked with red, the apical portion an inch broad, densely covered with prominent crimson papillæ and irregularly edged with white. The flowers are borne in pairs, and possess a strong and rather heavy odour.

In the second volume of the "Orchid Album" (plate 93), Mr. B. S. Williams gave an excellent illustration of this Cattleya, prepared from a plant in the collection of G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, near Manchester, after whom it was named by Professor Reichenbach, and at that time, 1883, it was believed to be the only plant in the country. It is evergreen, with terete stems 18 inches high, somewhat resembling both C. amethystoglossa and C. Leopoldi. The culture recommended by Mr. Williams is "rough fibrous peat good drainage, the plants well elevated above the rim of the pots, and the same temperature as C. Trianæ."—L. CASTLE.

ORCHIDS AT FOREST HILL.

THE following Orchids are now in flower at Messrs. John Laing and Sons' Nurseries, Forest Hill, London, S.E. :—Aerides odoratum, Brassia verrucosa, Cattleyas Gaskelliana and gigas Sanderiana, Cypripediums barbatum, Roezli, and Sedeni, Dendrobium Pierardi, Dendrochilum filiforme, Disa grandiflora, Epidendrum vitellinum majus, Galeandra species, Masdevallias Bonplandi, Lindeni, and Veitchiana, Maxillaria venusta, Odontoglossums Alexandræ, blandum, cordatum, crispum, Harryanum (fine), and Pescatorei, Oncidiums incurvum, Jonesianum, and orientale. There are also some good plants of Utricularia montana and Endresii in flower.

DEGENERATION OF FRUIT AND VEGETABLES.

[A paper read before the Massachusetts Horticultural Society by Mr. O. B. Hadwen, Worcester, U.S.A.]

(*Continued from page 83.*)

THE Cherry and Plum do not manifest a tendency to degenerate ; they seem to suffer through injury from insect enemies rather than from any inherent morbid condition. The varieties grown by the earlier cultivators are still known and esteemed ; manifesting, even under the influence of repeated engrafting and of artificial modes of cultivation, a decided tendency to long life. Cultural practices which seem to have impaired the longevity of the Pear and Peach apparently have little if any effect upon the Cherry and Plum, thus leaving the question of degeneration in these involved in considerable doubt.

Among the "small fruits" the Strawberry furnishes the clearest evidence as to its duration of life. Of this fruit, as nearly as I can recall, the kinds that have been cultivated thrive about thirty years ; although there have been a few instances of longer duration, and some whose term has been shorter. Of twenty sorts grown by nurserymen and advertised fifty years ago, not one is known in cultivation, if we except the Alpine, which seems to be perpetual, as does also the wild or native Strawberry. Within the past forty years hundreds of varieties have been produced from seed brought into notice, and are now gone to give place to new seedlings ; and but few now extensively grown have been known to cultivation twenty years. Of fifty-one varieties grown in the nurseries of the late William R. Prince in 1839 not one remains. The Strawberry reproduced from runners gradually becomes enfeebled and unproductive and passes away, giving place to new and vigorous kinds raised from seed, which seems to be Nature's mode of reproduction. The Raspberry, Blackberry, and Currant are long-lived, and sorts that were grown as far back as the memory of man runneth are as good now as ever, conditions being equal. New seedlings are brought out from time to time, which, as novelties, have a tendency to supplant the older sorts, but the Antwerp, Franconia, Falstoff, Knevett's, and Northumberland Raspberries, and a dozen others are just as good as ever. Neither do the Blackberries or Currants, when well grown, give much if any evidence of degeneration ; when they fail it may fairly be attributed to the influence of poor soil and cultivation.

Vegetables, especially those annually grown from seed, cannot degenerate ; seeds may become mixed and new sorts may be produced, but the annuals cannot be classed among plants that degenerate. Some seasons are found unfavourable to the development and growth of certain kinds ; and new sorts are continually being introduced and tried. The Potato, indigenous to the mountainous sections of Mexico and South America only, is consequently, when cultivated here, far removed from its native home, and it affords us the best illustration of the importance of renewal by seed. As usually propagated from the tuber, it grows and thrives well for about twenty-five years, after which it manifests a very decided tendency to degenerate ; and new seedlings are resorted to, which in their turn will last a given time and produce good crops. Within my own experience, I have grown the Black Rusty Coat, Long Red, Chenango, Rohan, Peach Blow, Carter, Jackson White, Dover, Davis's Seedling, Kidney, State of Maine, Early Rose, and Hebron, with several other sorts, but only two of all these are now cultivated.

To attempt the inquiry into the growth, longevity, and decay of the fruits and vegetables we cultivate—to seek to learn the natural principles involved in the growth of each species, and the laws and principles of decay belonging to each, is particularly difficult where each seems to be governed by different and intricate forces pertaining to its peculiar organism. Nature, with man's assistance, has produced fruits and vegetables in wonderful variety and profusion and of the highest excellence, and is still pressing onward ; every season brings some new success in the line of fruit or vegetable raising, and notwithstanding there is so much mystery clouding the whole subject—so much that we should know but do not—so much guesswork, instead of positive information, and so much that seems impossible for the mind to understand peculiar to each plant. Nevertheless, it appears worth our while to discuss these questions with the hope of new and increasing light pertaining to the philosophy and science of horticultural and pomological pursuits. There can be no end to horticultural investigations ; and few if any conclusions in this hidden science can be considered final ; and the subject we have been discussing still affords a wide field for inquiry.

The conclusions which I have been led to regard as provisionally established may be summarised as follows :—

First, Each fruit-bearing tree and plant seems inherently endowed with a certain given period of life ; this, however, is subject to be influenced by favourable and unfavourable conditions.

Second, Each species and variety of fruit-bearing tree and plant seems governed by conditions pertaining exclusively to its growth, maturity, and decay.

Third, Some fruits appear to degenerate, while others furnish but little evidence of deterioration ; and the latter statement applies equally to vegetables as a class during this century.

Fourth, While there undoubtedly is a limit to the life of every plant and fruit, neither science nor philosophy has yet determined the data by which we can deduce with any degree of accuracy the duration of life of any of the larger fruits or vegetables.

The subject, as regards each fruit, seems to be governed by separate laws and conditions ; and where such infinite variety exists it renders equally limitless the extent of possible inquiry, and opens a wide field for experiments and experience ; and also may be prolific in topics for discussion.

Mr. Charles M. Hovey was called on by the chair, and said that the subject had been treated by the essayist in a very able manner, and that it deserved the thought and attention of the members of the Society. That fruits degenerate we very well know, but whether from unfavourable climates or from other causes is not settled. The old varieties of Peaches are still in perfection in England ; within a week he had seen the Grosse Mignonne and George the Fourth recommended for cultivation as among the best varieties there. Of Strawberries the Keens' Seedling, introduced in 1821, and the British Queen, originated about forty years ago, are still favourite varieties, though the latter is not suited to our climate. The Hovey's Seedling and the Boston Pine were raised by the speaker in 1833, and in his ground still give as good crops of fruit as ever. The Wilson, which has been more widely cultivated than any other variety, is still very good. We cannot raise the Flemish Beauty and Easter Beurré Pears ; they have degenerated here, but in California they are as fine as ever, and whether their degeneracy here is inherent in the variety is the question. Mr. Knight's opinion that every tree propagated from a seedling, being a part of that tree, perishes when the lifetime of the original tree expires, has been proved fallacious. The trouble is that the lifetime of one man, or even two, is too short to make reliable observations on this subject. Men must take it up in succession, if possible, but hitherto they have not done so, and the result is that we are continually beginning, and never come to any certain conclusions on the subject.

Grafting is undoubtedly sometimes injurious, the stock and scion do not seem to be congenial. Many varieties will not succeed on the Quince stock ; with the speaker the Glou Morçeau and Duchesse d'Angoulême flourish ; and some of his trees have sent out roots from the Pear, while others have not. He could see no degeneracy in Pears except in a few varieties, such as the White Doyenné, Flemish Beauty, and Easter Beurré.

We can remember when we picked up the delicious Peaches under the trees, but we do not remember how many seasons there were when the crop failed. He had been out among his Peach trees and shaken them when the fruit almost seemed to fall into his mouth ; for six or eight years he got a crop one year out of two. He had read much on this subject and had been a pretty careful observer, and had come to the conclusion that to explain degeneracy we must not look for causes inherent in the variety, though perhaps this may exist to a certain extent in some, but to other causes, climatic or residing in the soil.

To the question whether grafted trees ever go back to inferior varieties he answered, No. He felt doubtful as to the influence of the

stock on the graft, but he admitted the existence of sports. The Lewis, one of our native fruits described in the "New England Farmer" many years ago by Samuel Downer, senior, is a very nice Pear, but too small and green, and he grafted a tree of that variety with Bosc. Afterward he noticed on another Bosc tree some small green Pears growing on a graft; which some persons might have accounted for by the influence of the stock, but inquiry showed that the grafts used on this tree had been taken from the first mentioned Bosc tree, and some had been carelessly cut from Lewis suckers below the graft.

(To be continued.)



ROSES IN WET WEATHER.

OWING to the long-continued wet and sunless weather large numbers of Roses have failed to open their blooms properly. When on the point of expanding, the outer petals commence to decay, and in the majority of instances no further progress is made. There are, however, a few noteworthy exceptions to the rule, the best of these being the Countess of Oxford. We never had this generally serviceable Rose finer or in better colour, and as it strikes more readily than other varieties with thorns, another large batch of cuttings will be put in next autumn. La France both on its own roots and budded on the Briar stock has given us many extra fine blooms, these being borne on rather thin growth, drooping somewhat, and thereby escaping injury by rains. Souvenir de la Malmaison, a well known Bourbon Rose which is easily struck and thrives best on its own roots, has yielded a continuous supply of good blooms, and will continue to do so till cut down by frosts. Cheshunt Hybrid against walls, also as standards and dwarfs, never was more floriferous with us, and the greater portion of the blooms were sound and fresh in colour. It is very sweet scented and, on the whole, one of the best Roses in cultivation.

Baroness Rothschild, although very different from any of the preceding as regards style of growth, being of stiff erect habit, has yet given us many very handsome blooms, and which have not been discoloured so much as might reasonably have been anticipated. The white form of it or Merveille de Lyon, has been a failure this season. The richly coloured Duke of Wellington on tall Briar stocks has not been injured by rains. Charles Lefebvre has done good service both as standards and its own roots, and we have cut numerous good blooms from dwarf blooms of the Duke of Edinburgh. Etienne Levet on its own roots has done remarkably well, in fact this showy variety never fails. The beautiful Madame Gabriel Luizet has passed through this most trying season better even than usual, and we have had many perfect blooms of it. Jules Margottin has done fairly well, and so also has the Comtesse de Chabrillant. The greatest failures were John Hopper (usually very serviceable), Captain Christy, Madame Eugène Verdier, John S. Mill, E. Y. Teas, Mrs. Baker, and Xavier Olibo, the blooms on these either refusing to unfold or else being badly discoloured. There is one bright side to the picture—viz., a good prospect of many fine late blooms being formed, more especially on the dwarfs. Numbers of these have pushed up long and fairly firm shoots, furnished with a cluster of buds at the point, which if duly thinned out should be invaluable for the August shows. La France, in common with Catherine Mermet and other Teas, has developed strong branching suckers which will produce a long succession of fine blooms. Last season very few succeeded in establishing many Roses on the Briar stock, neither the buds nor the stock "running" properly. This year the reverse is the case, the merest tyro being able to bud successfully, and in all probability will be able to do so throughout the month of August. We rather prefer budding late, as in this case the buds are dormant till the spring, when they break more strongly than do those that made a slight start the season they were inserted.—W. I.

ROSES IN WINTER.

I WISH to return my thanks and express my obligations to you, and through you to Mr. Bardney, for the excellent and creditable replies to my queries of 12th inst. *in re* Roses in winter.

Mr. Bardney seems to doubt my being a "learner," and that some of my queries implied doubt as to some statements he had previously made. Now, though I have been a diligent reader of "our Journal" for eighteen years, and practised as much of its unequalled teaching as lay in my way, yet I am strictly but a "learner" in this matter, and had not the least doubt of anything Mr. Bardney advanced, but followed even the large pots for my new Roses this spring, even though it was quite new to me to use such large ones. If a "learner" might be allowed to offer an opinion, I consider these papers—more particularly this last—of Mr. Bardney's excellent, and worthy of "our Journal."—S. S.

TIBSHELF.—JULY 24TH.

"TALKING about prizes, have you seen the Tibshelf schedule? Why, there are £6 for seventy-two, seven prizes for forty-eight, a class of eighteen for amateurs, and a class for twelve Teas." These words formed part of a general conversation in a Rose Show tent in the early part of the season, and were followed by divers inquiries of "What is Tibshelf?" "Where is Tibshelf?" and even, "Who is Tibshelf?" And, though geographical knowledge as to the locality seemed at that time to be very scarce, it was evident on the morning of July 24th that a good many rosarians from all parts of England had written to the courteous Secretary, Mr. R. Harrison, and had found their way to the place with goodly piles of boxes.

Tibshelf is a colliery village on the borders of Derbyshire, of about 2200 inhabitants, and, although the Roses occupied only four among nearly 200 classes, and the prizes ranged from £10 down to a steel spade, it was an extraordinary exhibition even viewed as a Rose show alone, and offered some food for meditation to those who know how large and wealthy towns make a fuss about offering £4 or £5 as the principal prize for Roses. If, perchance, any rosarian thought he had "discovered" Tibshelf, that the competition would not be strong, and that, with seven prizes in one class, one could not well be "out of the money," in such a case I fear there may have been some disappointment, for the competition was very keen indeed, and it was easy to be prizeless in any class. Now, please let all Rose Societies take note of this. At a little, comparatively unimportant, place like Tibshelf, there were staged eight stands of seventy-two as against five at the National Rose Show at the Crystal Palace, sixteen of forty-eight as against thirteen in two separate divisions at the Palace, six of eighteen (amateurs), and six of twelve Teas (open). Please take note of that. And if you want to insure to your visitors a grand sight of the best Roses to be seen that day in England, have big classes, good prizes, and plenty of them.

In the class for seventy-two blooms, first honours—a prize of £6 and the gold medal of the N.R.S.—were carried off by Mr. B. R. Cant of Colchester, after an exceedingly close contest, Messrs. Harkness & Sons of Bedale, Yorkshire, running him very hard indeed. Mr. Cant had the finest and "heaviest" H.P.'s in his stand (I heard the word "heaviest" applied to them, but hardly think it a happy term to use for best blooms), but he had somewhat of a "tail," which was carried, if he will forgive me, too much like a tail—viz., all at one end. Messrs. Harkness had a more even collection, their smaller H.P.'s being more in the middle, while their exhibit was wonderfully heightened by no less than twenty-two of the best Teas I have seen this season. A noticeable flower in Mr. Cant's stand was a very large "heavy" bloom of Baron Haussmann, while almost all the Teas of Messrs. Harkness were worthy of admiration. Mr. Frank Cant was third with a good stand. It should be noticed that there was an unfortunate, but very natural, misunderstanding as to the conditions of this class. The schedule—a wonderful thing in its way—said, "Seventy-two blooms, varieties," which was interpreted by the authorities to mean not necessarily seventy-two distinct varieties. The leading competitors had come prepared to show seventy-two distinct, so there were not so many duplicates as there would have been if this unusual arrangement had been known beforehand: but it was rather hard upon one or two, who did not hear of this till within a short time of the judging.

Sixteen stands of forty-eight distinct varieties! I think there was one which at the last moment did not come up to the scratch; but, even then, surely a class of fifteen forty-eights has seldom been equalled. They formed a wonderfully long line for the Judges to inspect, and a somewhat unusual order of merit followed. Rev. J. H. Pemberton of Havering-atte-Bower, Romford, was clearly first. He was evidently in good form, and able at last to hold his own with anybody. His H.P. blooms had wonderful size, substance and solidity. Messrs. R. Mack and Sons of Catterick, Yorkshire, the raisers of "Sir Rowland Hill," were second; and it was noticed that there was a bloom of this fine new Rose in Mr. Pemberton's stand, but not in theirs. Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, followed quite closely as a good third. Mr. Frank Cant was fourth, Messrs. Harkness fifth, and Messrs. Perkins & Sons of Coventry sixth. The seventh prize box had no name on the card while I was there, but I was told it belonged to Mr. W. J. Grant of Ledbury, Herefordshire. The remaining exhibits were some distance below the high standard which Mr. Pemberton had set to the class.

There were six competitors in the class for eighteen Roses (amateurs), and here Mr. Grant was first, having evidently reserved himself for this class. Mr. Pemberton was a good second, but I could not ascertain the name of the third. In the open class for twelve Teas or Noisettes there were also six stands shown. Messrs. Harkness were deservedly placed first, their blooms being fresh, clean, and of a good size. Mr. Frank Cant, who also has protected his Tea Roses during the wet season, and thereby contributed largely to his successes, was a good second, and Rev. A. Foster-Melliar third. The latter gentleman also contributed an extra box of twelve blooms of Comtesse de Nadaillac, which received an hc card. With such a large number of exhibits the local authorities very wisely availed themselves of the presence of so many of the leading professionals and amateurs by setting them to judge each other, as is done at the N.R.S. exhibitions. It was thus done expeditiously and satisfactorily.

Of the many other things to be seen at the Tibshelf Show I cannot ask for space to enumerate even those which were really worthy of mention. The very tickets of admission were gaily coloured cards, representing all the world and his wife in miniature on the way to the Tibshelf Show and Gala. I know there were all kinds of horticultural exhibits for all classes of people: flowers, fruit, vegetables, Wheat, Barley, Oats, and Turnips, wild flowers, butter, and honey; nigger entertainments, athletic sports, and the band of the Grenadier Guards;

for I saw all these. And I believe there were pigs, for there were classes for pigs in the schedule. For those in a pig club (What *is* a pig club?), and those not in one; for those who fed their pig with spice—dainty epicurean pigs, no doubt, and for those who fed him with powders. I rather wish I *had* seen the powder-fed one. I should have expected "somewhat of a tail" again. But I did not see any of the pigs; they were not in the Rose tent at all events.

But there was one class in the Rose tent for which a word must be said, "Class 122, group of plants arranged for effect, to cover about 155 feet." Seven prizes commencing with £10—£34 in all. Well done, Tibshelf! The exhibits in this class occupied the whole of the centre space in the large circular tent, round which the Roses were disposed. It has always seemed to me that it must be unsatisfactory to exhibit in any line where there is no strictly defined standard, and where competent Judges may have different ideals; but this would apply to all classes for decorations, and even to bouquets, and, as nobody seems to grumble, I suppose it is all right. The name, without any address, on the card belonging to the first prize group was Mr. Hacker. I should have thought this arrangement was rather heavy; the colouring seemed to be derived almost entirely from foliage and to have too great a preponderance of yellow. I preferred the group which was labelled fourth prize, Mr. Lyon's, as being lighter in general effect and showing a better arrangement of space and distance. But I daresay there are some "rules of the game" which I do not understand.

The day was showery, but I hope it improved in the afternoon after we left, and that the attendance was sufficient to repay the trouble expended, for we were all most hospitably entertained with breakfast, luncheon, and all we could want, and left the place with a very high opinion of the cordiality, pluck, and enterprise of the Colliery Club and Horticultural Society of Tibshelf.—W. R. RAILLEM.

LOUTH.

THIS Show was held in the Town Hall on July 25th, and was in every respect a highly successful one. The number of exhibits gathered together, when the adverse season for Roses is taken into consideration, was astonishing, and the excellence of the blooms was the subject of general remark. The number of cut Roses exhibited was 868, exclusive of the Roses used in designs, decorations, bouquets, and baskets, and there were fifty-seven boxes of flowers. The arrangement of the exhibits left nothing to be desired, and the Hall was prettily decorated. Hundreds of Ferns and plants in pots had been kindly lent and arranged by Mr. George Moody, with the most pleasing effect, and Mr. H. Norton also lent a number of Ferns for decoration. In the front of the orchestra there was an effective device, in Roses on a background of moss, 'Success to the Louth Rose Show," which must have taken Messrs. H. Clark and North many hours to arrange. It contained upwards of 300 Roses.

Messrs. Harkness & Sons of Bedale, Yorkshire, were given four first prizes, including the premier honour for Horace Vernet, the best bloom in the Show, and their success was well deserved. Mr. H. Norton of the Rose Nurseries, Louth, was also well to the front, and the fact of his taking prizes in such good company showed the excellence of his specimens. Messrs. Burch of Peterborough were well represented, and the specimens from Cambridge were very fine.

Amongst the best blooms in the Show there were the following in Messrs. Harkness & Son's collection: Horace Vernet, a splendidly built up flower, very dark and with very shell-like petals. This flower deservedly won the special prize for the best bloom in the Show. Other good blooms were Her Majesty, Etienne Levet, Antoine Ducher, Captain Christy, Ulrich Brunner, A. K. Williams, a well made flower; Catherine Mermet, a very handsome bud; and Heinrich Schultheis. In Messrs. Burch's stands the following were very good: Abel Carrière, a very dark bloom and very catching; Duchesse de Morny, Lady Mary Fitzwilliam, Ulrich Brunner, Alphonse Soupert, Duke of Connaught, Her Majesty, A. K. Williams, Dr. Sewell, Eli Morel, beautiful; and Horace Vernet. Messrs. Burch were awarded a special extra prize for Roses. In Mr. Norton's stands these were most excellent—viz., Alfred Colomb, Duke of Wellington, Etienne Levet, Magna Charta, Grace Darling, A. K. Williams, Lord Macaulay, Madame Chas. Wood, Ulrich Brunner, a very fresh bud, which won a special as third best in the Show; Pride of Waltham, La France, Merveille de Lyon, Comtesse d'Oxford, and Dupuy Jamain. In Messrs. Burrell's stands were capital examples of Lady Mary Fitzwilliam and Comtesse de Nadaillac, a lovely Tea which won second best special. Mr. Ismay Fisher had La France, Magna Charta, Catherine Mermet, and Her Majesty in very fine form. Dr. Clegg, Boston, had a good Ulrich Brunner. The quality of all these Roses, considering the very showery and boisterous weather of the previous day, was really very good.

There was only one bouquet, but it was a lovely one, shown by Messrs. Burch. The baskets of flowers were very beautiful, and Mrs. Chas. Dickinson was deservedly awarded premier honour. The class for designs by ladies elicited something novel and pretty. The first prize design was an artist's easel, by Miss Chatterton, of Hallington, which was complete with rest, palette, and brushes, and the picture consisted of the beautiful flowers of which it was composed. Miss Holland's submitted a well-formed model of a ship's anchor, with a chain of Feather Feu. Miss Lucas's design was a rustic style, very pretty and ingenious, made up of flowers, Ferns, &c. The only boxes of Roses not for competition were those forwarded by Mr. Cheney Garfit of Kenwick Hall. The President of the Society (W. H. Smyth, Esq.), and other gentlemen had intended to supplement the Exhibition, but the stormy weather had completely destroyed the value of their specimens.

We cannot close our comments upon the Exhibition without a word of praise for Mr. A. James, whose efforts had attained a success which exceeded the most sanguine expectations. The amount of work passing through his hands must have been prodigious, and we were glad to see that in the arrangement of the exhibits he had the benefit of the experience of Mr. W. Walkington. There appeared to be a unanimous desire that the event should become an annual one, and doubtless this expression of opinion will receive due consideration at the hands of Mr. James and the Committee of the Louth Rose Society.

The following is a list of prizes:—Open to all comers.—Class 1.—Thirty-six varieties, distinct, named: first prize, £3; second, £2; third, £1; £6.—First, Messrs. Harkness & Sons, Bedale, Yorks; second, Messrs. G. & W. H. Burch, Peterborough; third, Mr. H. Norton, Rose Nurseries, Louth; fourth 10s., Messrs. Burrell & Co., Cambridge. Class 2.—Twenty-four varieties, distinct, named: first prize. £2; second, £1; third, 10s.; £3 10s.—First, Messrs. Harkness & Son, Bedale; second, Messrs. Burch, Peterborough; third, Mr. H. Norton, Louth. Class 3.—Twelve Tea or Noisette, distinct, named: first prize, £1; second, 10s.; third, 5s; £1 15s.—First, Messrs. Harkness & Sons, Bedale; second, Messrs. Burrell & Co., Cambridge; third, Messrs. Burch, Peterborough. Class 4.—One bouquet, with own foliage: first prize, 5s.; second, 3s.; third, 2s.; 10s.—First, Messrs. Burch, Peterborough. Only one entry. Class 5.—Best bloom in the Hall, selected from any stand: first prize, 5s.; second, 3s.; third, 2s.; 10s.—First, Messrs. Harkness & Sons, Bedale; second, Messrs. Burrell & Co., Cambridge; third, Mr. H. Norton, Louth.

Open to county of Lincoln only.—Class 6.—Thirty-six varieties, distinct, named: first prize, £2; second, £1; third, 10s. First, Mr. H. Norton, Louth; second, Mr. Ismay Fisher, Scawby, Brigg. Class 7.—Twenty-four varieties, distinct, named: first prize, 30s.; second, 15s.; third, 7s. 6d. First, Mr. H. Norton, Louth; second, Mr. Ismay Fisher, Scawby. Class 8.—Twelve varieties, distinct, named: First, Mr. H. Norton, Louth; second, Mr. Walter Clegg, Boston; third, Mr. Ismay Fisher, Scawby.

For amateurs only within fifteen miles of Louth.—Class 9.—Twelve varieties, distinct, not named. First prize, Major Allott, Louth; second, Mr. R. Chatterton, Stenigot; third, Mr. W. Wood, Cemetery, Louth. Class 10.—Twelve, any variety, not named. First, Major Allott, Louth; second, Mr. Wood, Louth Cemetery; third, Mr. R. Chatterton, Stenigot.

For lady competitors only.—Class 11.—One basket of Roses, any variety, own foliage. First, Mrs. Chas. Dickenson, Louth; second, Mrs. H. Clark, Louth; third, Miss Chatterton, Hallington. Class 12.—Best floral design of Roses, with Ferns or any other dressing. Any other flowers may be added. First prize, Miss Chatterton, Hallington; second, Miss Holland, Louth; third, Miss Lucas, Louth. For cottagers only.—Class 13. First, Mr. George Dobson, River Head, Louth; second, Mr. Stamp, Broadbank, Louth; third, Mr. Thos. Wilson, Cawkwell.

ROSE SHOW AT THE PAXTON SOCIETY, WAKEFIELD.

THE annual Rose Show was held in connection with the Paxton Society, when, notwithstanding the unfavourable weather which has prevailed for some time past, and which has considerably interfered with the cultivation of the Rose and other flowers, there was a very large and magnificent display of Roses of many different varieties of form, colour, and scent, and they were much admired by a large gathering of the members and a number of visitors. The blooms were very tastefully arranged and displayed in a large, varied, and beautiful collection of vases and stands by Councillor Lupton, the energetic and genial curator, at whose house (the "Saw Hotel") the meetings have been held since the formation of the Society. Councillor Milnes, the President, was in the chair, and Mr. Brown, gardener at Hatfield Hall, occupied the vice chair. Mr. George Bott of Walton, who is a noted and very successful Rose grower, not only exhibited a large and fine collection of Roses, but he also read a very able and exceedingly interesting and instructive essay on the Rose, to the growth and improvement of which he devotes special attention, and with regard to which favourite flower he has on several previous occasions furnished essays.

Mr. Bott styled the Rose the flower of flowers, the queen of flowers, and said that whatever virtue any other flower possessed it was found in the Rose, which is the emblem of everything that is sweet and lovely, and the representative flower of the greatest nation on the face of the earth. He pointed out that the Rose is of a much more accommodating character than is generally supposed, and said that many people were deterred from growing it because they thought the soil in their gardens unsuitable. He advocated the liberal mulching of the ground with manure in autumn, and said that if this was carried out Roses might be grown in almost any soil. Roses should be freely, carefully, and judiciously pruned; if they spared the knife they would spoil the tree. To get rid of such pests as maggots, caterpillars, and green fly he recommended hand-picking. He considered mildew the greatest enemy to the Rose, and when he perceived it he cut off the infected branch or shoot. Speaking on the form of Roses, Mr. Bott expressed it as his opinion that Marie Baumann is the best form.

An interesting discussion followed on Rose growing, in which Messrs. T. Garnett, G. Gill, J. Hardwick, J. G. Brown, G. Parkin, and others took part. Mr. T. Senior, Solicitor, proposed a vote of thanks to Mr. Bott for his paper, which had, he said, been one of intense interest. Mr. Senior suggested that some of the Roses exhibited should be sent to the Clayton Hospital. Mr. H. S. Goodyear, in seconding the motion, endorsed the suggestion. Mr. J. Thomas, of Wrenthorpe, supported the motion, which was heartily carried and acknowledged.

A basket of Roses was made up for each hospital by Councillor Lupton, the curator, and the rest were distributed amongst the members. On the motion of Mr. H. Oxley, seconded by Mr. B. Whiteley (two of the Vice-Presidents), a very hearty vote of thanks was given to the exhibitor of the Roses, and the motion was acknowledged by Councillor Lupton.

ERRATUM.—In the report of the Wirral Rose Show on page 73, the first prize in Class 8 for twenty-four blooms, was doubtfully credited to Mr. Hall, whereas Rev. H. A. Berners was the winner of it.

REVIEW OF BOOK.

Notes on the Cultivation of Dutch and Cape Bulbs, Tubers, Roots, and Plants. By ANT. ROOZEN & SON, Overveen, near Haarlem, Holland.

THE authors of this little work have endeavoured to convey brief instructions on the cultivation of bulbous, tuberous, and similar plants generally grown indoors or out. The genera are arranged alphabetically, and perhaps the chief defect is that the instructions are too brief in several instances, but many useful hints are comprised in the 112 pages. Several hardy plants that are neither bulbous nor tuberous are included, the descriptions commencing with Abobra and terminating with Zingiber. A chapter is also devoted to "The Destruction of Insects," and a list of about 600 popular names of plants with their botanical equivalents is also given that will be useful to some readers. Many of the popular titles are, however, very far-fetched or mis-spelled, such as "Noachs Ark" for Cypripedium pubescens, "Parlour Palm" for Aspidistra lurida, "Peacock Tulip" for Calochortus venustus, "Thong Lily" for Imantophyllum, "Triplet Lily" for Triteleia, "Two Dollar Lily" for Lilium carniolicum, &c.

As examples of the style we quote the following:—

"*Freesia.*—Cape bulbs, producing flowers of the most delicious perfume when grown in the frame or cool greenhouse. Should be planted as early in autumn as bulbs are procurable, in a light rich soil, or a compost of loam, leaf mould, peat and grit or sand added for sufficient drainage. When planted in pots liquid manure should be applied once a week. Flowers in June and July, but may be forced into bloom at the end of December if required for Christmas decoration. They like bottom heat.

"*Fritillaria imperialis* (Crown Imperials).—Are exceedingly handsome, pendant, bell-shaped flowers of very tall form, hardy with protection, and they bloom early in spring if planted in good sandy garden soil about 3 inches deep. Left undisturbed for a number of years they form gigantic and picturesque groups among evergreen plants, &c. The beautiful varieties of red and yellow single-flowered Fritillaria imperialis are very bold and handsome when placed in the conservatory in company with dwarf-growing subjects. They bloom naturally very early in the season, and by potting the bulbs early, and assisting them with a genial temperature as soon as the young growth begins to make its appearance above the surface they are sure to do well. Single bulbs in 6-inch pots appears to be the best way of growing them. The striped-leaved varieties are worth growing for the sake of their foliage, but when surmounted by their coronets of bloom they are very beautiful. Sound loam, mixed with a small proportion of leaf mould, is all that is required in the preparation of the compost. In no case fresh manure or cow dung should be added to the compost.

"*Lilium* (Lily).—To this gorgeous, beautiful, and easily cultivated class of plants we have paid particular attention, and would invite special notice to our very complete and select collection. No class of plants capable of being cultivated out of doors possesses so many charms; rich and varied in colour, stately and handsome in habit, profuse in variety and of delicious fragrance, they stand prominently out from all other hardy plants, and no herbaceous border, however select, should be without a few of its best sorts. With a well-selected collection Liliums may be had in bloom from June to October.

"They should be planted from October till March, in a good rich loamy soil, abundantly mixed with decayed cow manure, but a deep soil is always of great importance. Plant about 4 inches deep. During winter it is advisable to cover the surface of the bed with a thin layer of manure, which will not only afford a slight protection to the bulbs, but will materially enrich the soil. However, care should be taken that no water stands round the roots during winter time, as this causes the bulbs to rot. In spring the manure may either be removed or dug in between the rows. The best time to transplant Lilies is in the autumn, but they also do very well when removed in winter and early spring. In any case care should be taken not to damage the roots and sprouts; mind also that the bulb does not dry. They may be left undisturbed for years, providing some manure be added every spring to the bed in which they are planted.

"All make excellent pot flowers with the exception of pyrenaicum and pomponicum. Being mostly of tall growth they are excellent for their stately and magnificent appearance when grouped with other plants, whilst the beauty of their outline and charming individuality lend an air of dignified gracefulness and 'sustained splendour' alike to the grandest conservatory and the tiniest greenhouse. Nearly all of them are deliciously fragrant, and the cut flowers are most excellent for the table, bouquet vases and glasses, the flowers being very lasting and opening full to the last bud in water.

"For pot culture, use an equal part of loam, peat, sand, leaf mould, and rotten manure, but the rougher the soil the better. Use deep pots, as roots run very deep, and after planting plunge these in a bed of coal ash, manure, cocoa fibre, or ordinary open border, protecting them from frost, and bring them indoors or in the greenhouse at their time of flowering.

"*Ranunculus* (Crow-foot).—Hardy tuberous-rooted plants; when grown in beds and edged with dwarf flowering plants the effect is superb. As cut flowers they are quite as useful as the Rose itself, while for bedding, ribboning, massing and edging, in separate or distinct colours, the effect is truly magnificent in the spring flower garden.

"The culture recommended for them is to plant in the first quarter of the year, if possible in a moist and fertile ground, about 2 inches deep and 3 to 4 inches apart. Turban Ranunculus may be planted any time from November to March.

"Both Ranunculus and Anemone tubers are injured by damp, and must be taken up when fully ripened and kept quite dry till again needed for planting.

"If planted early in spring or at the end of winter, the beds should be protected with leaves or other covering in order to exclude the frost and sharp winds. A supply of liquid manure when plants appear will assist them very much in propagating, and will prevent the soil from becoming too dry. Should there be a season of drought a supply of water will be necessary. Turban Ranunculus flower in May, Persian and French varieties about three weeks later."

Notes & Gleanings

NATIONAL CONFERENCE ON APPLES AND PEARS.—A meeting of the Committee appointed to carry out this project under the auspices of the Royal Horticultural Society, met on Tuesday last in the Council Room at Chiswick, Col. Beddome in the chair. A form setting forth the object in view, and a schedule for the guidance of exhibitors, were considered. These, with forms for eliciting information, will be printed and distributed as soon as possible. The exhibition of fruit, which will consist of selections embracing a stipulated number of varieties, will be more than ordinarily interesting and instructive. Papers will be read, to be followed by discussions thereon, during the Conference, which will open on Tuesday, October 16th, and close on Saturday in the same week.

—— ROYAL BOTANIC SOCIETY.—At a meeting of the Society, held on Saturday, July 28th, Mr. J. P. Gassiot, Vice-President, in the chair, Mr. H. E. Hunt was elected a Fellow, and the names of several others read for ballot at the next meeting. Several fine bunches of the Zante Currant Grape grown in the gardens were shown. The Chairman announced that the anniversary meeting would take place on Friday, August 10th. Mr. Henry Smith exhibited a flower of the Christmas Rose he had just gathered at Weybridge.

—— A LARGE MELON.—Mr. W. Iggulden, Marston Gardens, Frome, has just cut a fruit of a new Melon raised by Mr. A. Miller, Rood Ashton, Trowbridge, which weighed 11 lbs. 3 ozs. A second fruit yet hanging on the plant will probably weigh 8 lbs, and both are handsomely netted. The variety is the result of a cross between the Hybrid Cashmere and Melndoe's Premier. It has a white flesh, and the quality is first-rate. For culture in pots and boxes it is one of the best, the fruit in this case not being too large.

—— GARDENING APPOINTMENTS.—Mr. Page, late gardener at Fern Lodge, Bracknell, has been appointed gardener to H. P. Leseballas, Esq., The Highams, Bagshot, Surrey. Mr. Page is a very successful Chrysanthemum grower and holder of the Ascot challenge cup, and we wish him success in his new charge. Mr. W. Wilson, for some years foreman at Dropmore, Maidenhead, has been appointed gardener to W. Barron Esq., Sefton Park, Slough.

—— "W. T." writes—"Your entomologist. "J. R. S. C.," stated some years since that the natural history of the CUCKOO SPIT FROG HOPPER INSECTS was obscure. Is that still the case? I see nothing of the hopper after August, and never see what lays the eggs upon the plants in May or June. I have never seen them so numerous and destructive as they have been this year. I have killed many thousands of them. While out the other day I discovered to my delight a fly killing a daddy longlegs. Is a fly known to be an enemy to the daddy longlegs?

and if so, might they not be encouraged? The hopper also in its egg-laying state might by some means be destroyed in its early stages."

—— THE GARDENERS' ORPHAN FUND.—A largely attended meeting of the Committee of this Fund was held on Friday evening last. Mr. G. Deal was unanimously re-elected chairman for the ensuing year. The expenses in connection with the late dinner were examined, and found to have been met with a balance in favour of the Fund, and the bills were ordered to be paid. Votes of thanks to Sir Julian Goldsmid, Bart, M.P., the donors of plants and fruits, the local secretaries, and the hotel managers for contributing to the success of the event, were ordered to be recorded in the minutes. The Committee had then brought before them the generous offer of Mr. Sherwood to place a child on the Fund at his own expense, and for carrying out the benevolent project it was stated he would give a contribution of £100, the recipient of the benefit to be chosen by the Committee. This noble offer was thankfully accepted, and a child at once nominated—one of a family of ten children left fatherless and only two of them able to earn anything. It was then determined that the payments, commencing from July 31st, would be made to the guardians of the eleven elected candidates as soon as the contracts were signed, Messrs. Deal and Barron being deputed to conduct the transactions. An additional £500 were ordered to be invested in Consols, and the rules, with the report and financial statement, ordered to be printed for circulation among the subscribers.

—— AMONGST the non-competing exhibits at the National Carnation and Picotee Society's London Show recently, was the new CARNATION COMTE DE CHAMBORD, that is likely to prove acceptable for cutting purposes. It was exhibited by Mr. Walker of Thame, and has pure white large and well formed blooms with a full Clove fragrance.

—— MR. T. S. WARE, Hale Farm Nursery, Tottenham, sends us flowers of HELIANTHUS RIGIDUS, which is said to differ from the ordinary form in flowering fully three weeks earlier. It has now been in flower for several weeks, and though slightly damaged by the frequent rains affords abundance of its bright clear yellow blooms.

—— A NEW weekly horticultural periodical, bearing the title of "The Garden and Forest," was commenced early this year in the United States, under the editorship of Professor C. S. Sargent. Each number contains twelve pages of matter the same size as this Journal, and the price is somewhat higher. It is well printed on stout paper, and freely illustrated with wood engravings and photogravures.

—— A CORRESPONDENT states that at the distribution of prizes at the CHILDREN'S FLOWER CLUB IN SPALDING recently, Mr. G. F. Barrell delivered a practical and instructive address to the 400 competitors and the general company present. The principal gardening operations were admirably illustrated by apt comparisons and amusing homely language—exactly what was required on such an occasion."

—— UNDER the title of "LIFE-LORE" a new monthly magazine has just been issued devoted to all branches of natural history, and it will no doubt find favour with numerous readers. It is well printed on good paper, liberally illustrated, and, judging by the first two numbers issued, will contain interesting articles upon a wide range of subjects. It is edited by Mr. W. Mawer, and published at 4, Essex Street, Strand.

—— "H. W." writes:—"Those of your readers who have visited Ilfracombe during the summer months will not have forgotten the grand effect which CENTRANTHUS RUBER produces on the Lantern Hill close to the quay of that charming seaside resort, and also in other parts of the town. The plant is a hardy perennial, 2 feet high, and produces a profusion of red flowers. It is also met with plentifully in the Isle of Wight, under the popular name of Isle of Wight Sedum. It is easily increased by division of the roots and by seed sown in a warm border in the month of August or spring."

—— TOOTING AND MERTON ABBEY HORTICULTURAL SOCIETY.—On July 26th the monthly meeting of this Society was held at the rooms of the Conservative Club. The last meeting was held in June, that for July having been dispensed with on account of the busy horticultural season at which it would have been held. There were present Messrs. J. Eade (Chairman), Fullick, Jones, Lambert, Martin, Melhuish, Pugh, sen., Pugh, jun., Raven, Schmeider, Seymour, Ware, Williams, and Whiteside. Mr. Seymour read an able and interesting paper on the Strawberry, giving a detailed account of propagating, the class of soil requisite, and the varieties. Mr. Fullick exhibited some splendid specimens of "Dreadnought" Cucumbers, "Telephone" Peas, and Red and Black Currants, for which he received horticultural certificates. Votes of thanks to Mr. Seymour for his paper and the Chairman for his attendance closed the proceedings.

—— TRADE ANNOUNCEMENT.—Mr. W. Denman, 7, Catherine Street, Covent Garden, London, W.C., Horticultural Agent, informs us that "Having for some years past recognised the importance of securing speedy transit and quick delivery in the case of all plants sent from the Continent to England, and *vice versâ*; and having myself suffered great inconvenience, annoyance, and loss from causes which could easily have been avoided had the shippers entrusted with plants possessed any practical knowledge of their nature and requirements, I beg to inform you that my business with the Continent having become so extensive, I am now obliged to take up the business of a shipping and forwarding agent. I have secured admirable premises for this branch of my business at 12, Cooper's Row, Crutched Friars, London, with accommodation at the various wharves for the proper and prompt warehousing of the most tender plants. The business will be carried on under the style of Denman & Co."

—— THE usual fortnightly meeting of the WALKLEY (SHEFFIELD) AMATEUR FLORAL AND HORTICULTURAL SOCIETY was held at the "Howard Hotel," Walkley, on Friday last, the President (Mr. T. B. Hague) in the chair. There was a large attendance of members, and the exhibits by members of plants and cut flowers were both numerous and of very high quality. Amongst them most noticeable were some exceptionally fine stands of cut Roses, and a collection of Delphiniums and Phloxes exhibited by the President; also a fine collection of Gloxinias (cut flowers), large specimen plant of Adiantum cuneatum, and other plants by Mr. F. Barnes; Tuberous Begonia and cut Roses by Mr. Herringshaw; a pretty collection of hardy Ferns (small healthy specimens) by Mr. C. Batty; and a remarkable collection of fine Mushrooms from Mr. Duncan Gilmour, jun. (Rose grower), grown on outdoor ridges, as advocated by Mr. Wright in "Mushrooms for the Million." A paper was read by Mr. W. K. Woodcock, entitled "Flowering Begonias; their History and Cultivation," which was attentively listened to and elicited much praise from the members present. A very interesting and useful discussion followed, and the usual votes of thanks concluded the business of what had been a very agreeable meeting.

—— A CORRESPONDENT writes:—Under most disadvantageous circumstances as to weather a pretty VILLAGE FLOWER SHOW was held in the cricket ground, Long Ditton, Surrey, on July 25th. The Exhibition was the first of the kind in the district, and the Committee may be congratulated on the success of their undertaking. Groups of plants arranged for effect were a pleasing feature, first honours being accorded to Mr. W. Palmer, gardener to W. F. Hume Dick, Esq., Thames Ditton House, for an arrangement which found many admirers. He was closely followed by Mr. Simmonds, gardener to G. B. Windeler, Esq., Long Ditton; the third prize being awarded to Mr. Farr, gardener to H. Speer, Esq., Thames Ditton. The latter exhibitor secured first prize for six good stove and greenhouse plants, comprising well flowered examples of Plumbago capensis and Stephanotis floribunda. Fruit was well shown by Messrs. Palmer, Simmonds, and Farr. Messrs. Sutton & Sons offered special prizes for their Perfection Tomato, the first prize being secured by Mr. W. Palmer, and the second by Mr. A. Farr. Amongst miscellaneous exhibits, not for competition, were handsome cut Roses contributed by Messrs. C. Lee & Son and Messrs. J. Veitch & Sons. The cottagers' vegetables and cut flowers were especially fine. Rather a novel feature was introduced in this section of the schedule, under the heading of "Industrial," prizes being offered for the best specimens of plain needlework in making, mending, and darnings. Her Royal Highness the Princess Frederica visited the Exhibition during the course of the afternoon.

—— MR. C. E. PARNELL, writing in "Vick's Illustrated Magazine," respecting "THE BORDERED MORNING GLORY," says:—"Ipomœa (or, as it is termed by some, Pharbitis) limbata elegantissima, is a very beautiful rapid-growing annual climbing plant. It is of vigorous growth, attaining a height of from 15 to 20 feet, having cordate three-lobed leaves, at the axils of which are produced its very showy flowers. This variety is one of the finest of the genus, the large

funnel-shaped corolla having a rich, bluish-purple centre in the form of a star, and it is also bordered with a broad pure white margin. The flowers are produced in the greatest profusion from June until frost. This Ipomœa is a plant easily cultivated, doing best in a moderately enriched deep soil and a sunny situation. It does best when started under glass, and the seed should be sown about the 1st of April in a well drained pot or pan filled with rich loamy soil. Sow thinly and cover slightly, place in any warm moist situation close to the glass, and as soon as the young plants are strong enough to handle carefully repot them into 3-inch pots; pinch back the leading shoots frequently, and gradually expose to the open air, and plant out as soon as all danger of frost is over and the weather has become warm and settled. Support must be given before the plants commence running, and during the growing season they should be frequently examined, and the young shoots trained so as to occupy the required space, whether to cover latticework, trellis, or pillars. In dry weather the plants are sometimes attacked by the red spider, and as soon as this pest is noticed they should be freely and frequently syringed. Seeds are very freely produced, and by this means the plant is increased."

—— CASSELL'S "Familiar Trees" for August deals with THE BOX, and in the course of the chapter the following remarks occur—"Reckless destruction of both the commoner and the more valuable kinds of timber trees has been, and is, only too frequent in all parts of the world. In not a few cases its effects are already being experienced in an insufficient supply of wood either for general use or for some special purposes. The rapidly increasing demand for the wood of the Box, especially for engraving, and the carelessness in the past as to the Caucasian forests of this timber, have now for some years excited apprehensions among the consumers and stimulated inquiry as to suitable substitutes for this material. The wood is remarkably heavy, being the only European timber that will sink in water; it is yellow, very hard, compact, and even grained, so as to be susceptible of a fine polish. It is still employed both here and on the Continent, for a variety of purposes besides wood-engraving, for which art, however, the finest quality of Boxwood is mainly reserved. It is used for inlaying, for mathematical instruments, especially foot-rules, for weaving-shuttles, and other turned articles. Some of these, however, are made at St. Claude, not from the stem, but from the root, the wood of which is often beautifully veined. The art of wood-engraving is older than that of printing, the old block-books, such as the "Biblia Pauperum" of the first half of the fifteenth century, being engraved on a series of large blocks. It is, however, only since the time of Bewick that wood-engraving has become general as a means of book illustration; as possibly the introduction of the many photographic and electrotypic processes now in vogue may afford a solution of the difficulty as to the supply of Boxwood in the future. Some Boxwood can, undoubtedly, be procured from India and the Cape; and of the various substitutes suggested, whilst our own Hawthorn seems the best, Pear, the American Dogwood (Cornus florida), the Texas Ebony (Diospyros texana), and the West Indian Trumpet-flower (Tecoma pentaphylla) all promise to prove useful."

—— MR. E. L. LAYARD, British Consulate, writing to *Nature* on THE DISPERSION OF SEEDS AND PLANTS, has the following interesting remarks respecting Mr. Morris's article on this subject, which has been previously noticed:—"Thousands of acres of pasturage have been destroyed in this island by the distribution by birds of the Lantana, which was unfortunately introduced here by the first Roman Catholic missionaries to form a hedge for their property at St. Louis or Conception. The Gendarme plant (an Asclepiad) was brought here in a pillow by a Gendarme from Tahiti. It was a seed attached to a wing of silk cotton. The gendarme shook out his pillow; the wind carried the seed to a suitable spot, and now it vies with the Lantana in destroying our pastures. I have shot the great fruit pigeons of Fiji and this island with several seeds of the Canarium (?) in their crops, as Mr. Morris says, as big as hen's eggs. The seeds of water-plants are conveyed, with the eggs of fresh-water Mollusca, to vast distances, adhering to the hairs and feathers of the legs of water birds—ducks, herons, and waders of all sorts. In London the basins of the fountains in Trafalgar Square were peopled by Lymnea brought thither from the Serpentine, attached to the feathers of the sparrows who bathed, first in one, and then in the other. Another plant which occurs to me as being largely indebted to man for its distribution, is that known as the Cape Gooseberry, which is a native of South America. The Kaffirs call it the 'white man's plant,' and say it follows the white man everywhere. I know it is found in India, Ceylon, Africa, Fiji, New Caledonia, New Hebrides. I really believe boiling it into jam does not destroy the vitality of the seeds. We have a plant here, bearing a lovely flower, but whence it comes no one knows. It has hard wooden seed capsules, each furnished with two hooks as hard as steel and as sharp as needles. These, hooking into the hide of any animal, would be carried for days until forcibly dislodged. The Bathurst burr (Xanthium spinosum) was introduced into the Cape in a cargo of wool wrecked at Cape Lagulhas, and spread out to dry, first there and then at Simon's Town, at both of which places the 'burr' sprang up. I believe and hope I destroyed the first and last plant of it that sprang up in New Zealand some twenty-five years ago. The seed had been brought in the living fleece of a fine merino ram. The owner was cherishing the 'wonderful new plant,' and was not a little horrified when I took out my knife and cut it down. He was more horrified when I told him what it was."

WEIGHTS OF STRAWBERRIES.

IN reply to your correspondent "Saxoring" I give below the weights of ten different varieties of Strawberries taken this season.

Name.	No. of berries in ¼ lb.	Average weight per berry.	Heaviest individual berry.
		Ounces.	Ounces.
1, Black Prince	19	0·21	0·33
2, Wizard of the North	12	0·33	0·50
3, Elton Pine	9	0·44	0·66
4, Vicomtesse de Thury	7	0·57	1·00
5, Filbert Pine	6	0·66	0·90
6, Sir Harry	5	0·80	1·00
7, British Queen	5	0·80	1·25
8, Sir Joseph Paxton	5	0·80	1·33
9, President	4	1·00	1·25
10, James Veitch	3	1·22	1·75

The above are fair average samples, chiefly grown on one and two-year-old plants. The Vicomtesse Hericart de Thury were especially fine, being grown on maidens planted out last August. Sir Joseph Paxton were much inferior to previous years. Of others, Keens' Seedling may be classed with No. 4, Dr. Hogg with No. 7, and Marguerite with No. 9. I never saw a Strawberry that weighed 4 ozs., but have often seen them turn the scale at 2 ozs. Even then the berries must be 2 inches through the thickest part at least, as a cubic inch of solid fruit only weighs about half an ounce. It would be interesting to learn the weights of the new varieties. King of the Earlies with us ranges with No. 3 on the above list. Noble, I suppose, will be equal to James Veitch. The above list does not pretend to be complete, and the record of a number of years would possibly alter the figures. They are, however, approximate, and may serve the purposes of your correspondent.—JOHN LOVEL, *Driffield*.

CULTURE OF EPACRISES.

EPACRISES, which may be considered as the Heaths of Australia, are much more accommodating than Ericas, the true Heaths of South Africa, as they will pass uninjured in an atmosphere that would not disagree with a general collection, when the Heath proper would be ruined for want of a current of fresh air, and, in consequence, become a prey to mildew with all its attendant evils. Both in their native countries are found to thrive best in open, exposed situations. Both are exposed to heavy rains at times; but also to long periods of bright sunshine and very warm weather. The one excites rapidity of growth, the other ripens and consolidates the wood. Such modes may be followed in this country by the experienced in the case of both families; but the inexperienced would find that in a close, warm atmosphere the Heath would become lanky and encrusted with mildew, whilst the Epacris would maintain its health and vigour. In other words, the latter will stand uninjured more extremes of heat and cold, of dry and moist air, and dryness and moisture at the roots, than the Erica.

One advantage of the whole Epacris group is, that whether what is called species, or beautiful garden florist-raised varieties, the most of them bloom in the spring, and if treated for the purpose might just as easily be made to bloom in winter. Many of them without anything like extra attention will begin to open their blooms after Christmas if the average night temperature is seldom below 45°.

We will first direct our attention to pruning, and describe two

different modes of treatment according to the circumstances and tastes of two different classes of amateurs. The first having reference to those who have a forcing-bed, or pit, or plant-stove, or a forcing-house—say a vinery or a Peach-house at work, or can make one end of their greenhouse closer and warmer for a time than the rest of it; and the second, applying more to those who have merely a miniature greenhouse, the temperature and atmospheric condition of which can hardly be otherwise than uniform all over, and perhaps a small turf pit to assist in keeping that greenhouse gay and in good order. Taste may also somewhat determine the matter; as in the first case it will be possible to have long shoots from 12 inches to 30 inches in length covered with bloom from end to end, and in the others to have dense bushes covered with bloom, but chiefly from shoots a few inches long. Our mode of pruning them will constitute the basis for our general management.

Now, as to the first supposed conditions. We will conclude that the plants have finished blooming, and are in 4 or 6-inch pots, as they were obtained in autumn or spring from the nursery. Each plant therefore would have most likely a number of shoots; and the quickest and best way to get rid of all the decayed blossoms and incipient seed-vessels is to prune back all these shoots within 2 or 3 inches of their base. To make something of a symmetrical plant on this system the centre shoot or shoots might be left 9 inches long or more, another ring half as long, and the next cut in to an inch or so. This plan will give the plant something of a pyramidal appearance afterwards; and when once thus established each set of shoots may be cut back every year when done blooming, much as you would cut a Willow stool, leaving only a bud or two to each shoot. When plants are very young and in small pots it is as well not to cut back too close; and when the plants get old it is also injudicious to cut back into older wood than that made the previous summer. On this plan, therefore, either a Willow stool or a Vine on the spur-pruning system will furnish examples as to pruning the Epacris; only keeping in mind that it is on the wood springing from such spurs, longer or shorter, and well ripened before winter, that the bloom-buds are to appear and open the following spring.

When the plants are thus pruned the plants like a little rest. Allow them therefore to remain in an airy, shady part of the greenhouse for a week or so, and give but little water, as the evaporating surface will be mostly removed. A slight dewing from a syringe frequently over the top of the plant will be more serviceable than deluging at the roots. Hardy as the plants are, I have known them depart in dudgeon when under such circumstances the soil was waterlogged from too heavy and often repeated applications from the water-can.

The next thing, if possible, is to remove the plants to a forcing-pit or house—say to a temperature of 60° to 65° in May and June, or earlier if wanted early, and to give them a rather close, moist atmosphere. After this the soil must not get dry, but neither must it be saturated. The gentle sprinklings of the top frequently from the syringe will cause the young shoots to push vigorously from what was left of last season's growth; and if these are more numerous than can find room for growing, it is advisable to thin them a little when from 1 to 2 inches in length. When a little more than the last length is the best time for potting, if the plants require it. At any rate the drainage should be examined and fresh surfacings be given to the pot. At first we would recommend rather small shiftings—that is to say, after the fibres on the outside of the ball have been gently disentangled, and a little of the lower drainage removed, from half an inch to an inch space all round will be quite sufficient. We are now saying nothing about the large-shift system, as on the whole that requires extra attention, especially in watering.

The soil required should be mostly good heath soil, rather rough for the size of the shift, with a portion of silver sand and some little pieces of charcoal and broken pots to keep the soil a little open and allow the water free access to the drainage, which must be extra well attended to. I have supposed that no plant is repotted in which care has not been taken previously to see that the ball was moist to the very centre; as otherwise, in repeated waterings the moisture would be apt to escape by the sides of the pot, and leave the mass of roots in the centre as dry as a well-burnt brick—one fruitful cause of consigning many a plant to the rubbish-heap that otherwise might have flourished for years. When the plants are large and old a little fibry loam added helps to keep them strong and robust.

When this repotting is done the plants should be replaced in the same genial growing atmosphere, waterings given whenever the plants require it, and frequent dewings overhead administered from the syringe, and a powerful sun deadened until the shoots are progressing freely in length. Then the plants should still have the stimulants to growth referred to; but at the same time be placed in more open spaces, so as to enjoy the beams of the sun unshaded. According to the time when the plants received this treatment, by July or August, the plants may be removed to a cold pit, on which the glass may be kept at first for a week or ten days, just giving the plants enough air to prevent them getting overheated and drawn; and then just take off the lights for some hours in the morning and evening; and then remove them altogether in a week or so, except when there is a likelihood of heavy rains. At this stage the plants will stand and delight in the brightest sun; but the roots will be apt to be injured if the pots were fully exposed. But for this the plants in August and September would be as well in an open place out of doors as a cold pit. The latter helps to shelter the pots.

It will be seen that by the above method the object is to obtain long shoots, stimulated at first into growth, and then exposed to the sun to consolidate and ripen the growth, in order that the long shoots may be clustered from end to end with flower-buds. The plants should be housed by the middle of October. When growing freely, a little weak, cool liquid manure will be of advantage; at other times I prefer it to be clear, pure, and soft. After housing, the plants may range in temperature, and with plenty of fresh air, from 35° to 40°. When kept a little higher the flower-buds will swell quickly. Some ladies are very fond of such long shoots, all bloom, for making bows and wreaths. Where the conveniences exist, this is, on the whole, the easiest plan for growing these plants well, and the method is so simple as not to confuse by intricacy. Its success depends greatly on being able to assist growth after pruning with something like a tropical climate. I have managed that in hot summers, with a common glass frame, by giving little air, shade when necessary, and a moist atmosphere until we considered it was time to harden the shoots. In such cases the sun acts as the heating medium in a hothouse.

The main features in the second mode are similar, but attended with less trouble as to giving the plants suitable positions during the season. In this case it is best to give the plants a bush form. Instead, therefore, of cutting back the young shoots that you received on the plant you had from the nursery, when done flowering it is best merely to nip off part of their points, and then tie out these shoots—some merely on a level with the rim of the pot, and others in intermediate positions between that and the central perpendicular one. After resting a few days, and syringing the stem and head, keep the plant in close and a little shaded. When the fresh shoots start the general management will be similar to the first case; only if you are not able, by shutting in the sun's heat, to make a cold frame or pit into a hothouse, with few exceptions the growth of your young shoots will be short, though there will be plenty of them. These, though short, will require ripening, as well as their longer rivals, and, therefore, by the end of July, or the beginning of August at farthest, the plants must either stand in an open sunny place in the greenhouse, or be placed out of doors in a turf-pit, or where the pots may be sheltered from the blaze of an autumn sun. If the plants are kept in the greenhouse, to prevent the pot getting too hot for the fine hairlike fibre roots close to its sides, it is a good plan to put the pot inside a larger one, and stuff a little moss in the opening between them at the top. By this mode, when the plants are fully established, very little pruning will be required every year, farther than just nipping back the shoots a little, and getting rid of the old decayed flower buds. Thus treated, and weak liquid manure given when the plants were growing, and a few similar doses when they were blooming, we have seen stubby specimens kept in 6 and 8-inch pots for a number of years; care having been taken to drain well at the first to prevent the entrance of worms, and surface with fresh compost every year.

For window greenhouses I would prefer the last plan. In a common sitting-room, the temperature at the window averaging 50°, with a fair amount of fresh air, the plants will keep well in the spring months for a month or six weeks, or more. If the temperature is higher it will be difficult to keep the atmosphere pure and moist enough in proportion, and the blossom will be apt to fall prematurely, and the plant to become unsightly. Under such circumstances the plants will be kept over the winter better near the window of an unoccupied room where little or no fire heat is used, and where a little fresh air can be given when the outside temperature is not under 35°. In such a place the plants should rarely be lower than from 35° to 40°. By closing such a room at night, it would be rare, even in winter, that fire in the grate would be needed to keep out frost. When there is no convenience out of doors, and it is desirable that the windows of the sitting-room should be as gay as possible, a sort of plant-room of this kind is necessary as a nursery-reserve for supplying the others. An Epacris plant so kept in winter will have a very different appearance in March and April when compared with one that was kept all the winter in the sitting-room, and exposed to the alternating heat and cold, and dried atmosphere, which are imagined necessary for the comfort of the family.

The Epacris has rarely succeeded as a window plant because some of these little matters have been forgotten. The following is something like the system to be followed:—Prune and grow as in the second mode, and the window of the living-room will then be none too hot. Place the plant outside the window by July and August, if possible, and place the pot inside a larger one, or place the plant in similar conditions out of doors. House the plant in October. Place it in the window of a room where little or no fire is used in winter; keeping the plant from frost by moving it to the centre of the room, and covering it if necessary, or lighting a small fire if absolutely essential. By March bring the plant to the window of the sitting-room, and with the extra heat and a little sponging, or rather brush-dauhing with water, the buds will soon swell and open. When the flowering is over repeat the process. In winter, whilst kept cool and airy, the plants will want a little water, and that should be a few degrees warmer than the average heat of the room. With such care the same plants may ornament a sitting-room for years; without it they will rarely last above a season.—S. H. R.

MAKART DECORATIONS.

An extremely elegant form of decoration, under the above name, has been brought into prominent notice of recent years, more especially by Messrs. Hooper & Co. of Covent Garden, who have given considerable attention to the matter, with very satisfactory results. The principal characteristic of the method is that dried Palm leaves, Grasses, and flowers are chiefly employed with most tasteful and durable results. It

is said that the artist Hans Makart had once decorated his salon with Palm leaves, Pampas, and Grasses in a very effective manner, when it was visited by the Emperor of Austria, and the style so much admired and praised that it at once became fashionable. Unquestionably some charming combinations have been produced, and one very graceful example of the Makart style is shown in fig. 11, kindly lent by Messrs. Hooper & Co. as a typical illustration. It gives a good idea of what can be accomplished by artistic taste. Similar designs are employed for hanging baskets, as "wall bouquets," corner stands, wall pockets, fire-stove screens, mantel shelves, and side boards, all alike being distinguished by their lightness and variety. Several different species of Phœnix, Latania, Areca, Geonoma, and Cycas are employed with Bulrushes, Pampas plumes, a great variety of Grasses, Eulalias, and a few peacock feathers, besides everlasting flowers, especially Rhodanthes, Cape Silver Leaves (Leucadendron) Immortelles, and many others.



FIG. 11.—A MAKART REGAL BOUQUET.

RHODODENDRON CULTURE.

It is not surprising that a plant possessing so many good qualities as the Rhododendron should become a general favourite. Almost exceeding many of our native plants in hardiness, all that can desired in habit, and affording as great a diversity of colour as any flower, it deserves more attention than it usually receives, and certainly more than many plants that are eagerly sought after. Perhaps one reason of its being less extensively cultivated than it ought to be, is the idea that only a certain description of soil suits it. This popular idea is certainly carried farther than is proper, and I will endeavour to show that the plant, or at least the common varieties of it, can be grown in more kinds of soil than usually supposed, so that there are probably many

places where it might be planted with advantage, if right means were taken at first to insure success. Unfortunately, this is not always done, and the consequence is a failure, when it might have been avoided, and the cultivation of the plant is abandoned. Perhaps a little consideration of the conditions under which the plant was growing prior to its being tried on such a spot, may tend to explain the reason of failure, and point out a course more likely to be successful.

This plant seems to flourish best in the dry upland peaty soils which are met with in many districts; there its cultivation is desirable, and although for special purposes we often see large quantities of suitable soil removed to a considerable distance to make a bed, this cannot be done in all cases where the Rhododendron is to be grown. On the other hand, it must be admitted that there are many soils and situations where this plant will refuse to grow, but then these are much fewer than is generally supposed, and a due regard to some other points of the plant's culture will show that the number of intermediate sites or soils is very large, and that there are not many neighbourhoods which do not possess a suitable soil, Few plants more readily adapt themselves to removal than the Rhododendron, provided the operation be performed at the right time and in the right manner. The subject is so important, and the cases where failure occurs so numerous, that some remarks on these and the mode to obviate them seem desirable; I shall, therefore, under different heads make the remarks which may seem applicable.

Soil.—Although much as has been written on this, I believe there are few who have planted the Rhododendron extensively on different soils who will not acknowledge they have been several times deceived in the results. Either the plants have not succeeded well when they were expected to do so, or they prospered where they were scarcely expected to grow at all; in fact, the soil requisite to support the healthy growth of this plant is far from being generally understood, and often a just knowledge of the matter is only attained by a trial. A number of plants are tried on some soil that appears to be suitable, and the result watched with interest; if successful, all is well, but if otherwise, the ingenuity of the planter is set to work to ascertain the cause, and a trial elsewhere is perhaps determined upon. I will now direct attention to the soils and situations in which this plant is found to thrive with more than ordinary luxuriance, and I will endeavour to point out how far they can be imitated elsewhere.

In taking a casual survey of certain districts it will often be found, that although a certain class of soil generally prevails, now and then patches of quite another kind are met with, entirely surrounded by soil of the prevailing character, and varying in size from less than an acre to the extent of several parishes, and it not unfrequently happens that suitable sites for the Rhododendron occur in such isolated plots. For instance, some places in the neighbourhood of Dorking are well adapted for the growth of the plant in consequence of the favourable soil cropping out, while the district generally is chalk, with a thin crust of overlying soil almost as white as the chalk itself; yet here and there patches of peat, or a close resemblance to it, meet the eye, while farther westward in the same county peat appears to form the staple soil of the district, extending from almost the centre of Surrey a considerable way into Hampshire, with occasional breaks and irregularities. This neighbourhood, so favourable to the growth of the Rhododendron, has been taken full advantage of, and some of the largest nurseries for the rearing of plants have been formed there.

Other districts also furnish similar sites. A peaty soil well adapted for the purpose exists in large breadths throughout many of the midland and western counties, Cornwall affording as many varieties of soil, with as large a proportion favourable to the growth of this plant, as any county. Speaking, too, without a thorough knowledge of the matter, I believe most of the eastern counties possess a much less extensive range of dry upland peat, although that of a marshy kind may be plentiful enough. Large tracts, however, exist in Derbyshire and Staffordshire, but the wet mosses of Lancashire have to endure a course of draining and cultivation before they become fitting abodes for this highly ornamental plant. Farther north peat is plentiful, and it is questionable whether any spot in the northern part of the kingdom can be found which is ten miles from a peaty moor, or some place of a like kind. Indeed, I am certain that there are not many places in any part of the kingdom half that distance from some spot where the Rhododendron will flourish, for a black peat is not the only soil that it will thrive upon, as it often exhibits every appearance of vigorous health on soils that to an ordinary observer look the very opposite of peat, and these, too, so different from each other that I am convinced the numerous places suitable for the growth of the plant have not yet had a fair trial. The black sandy peats of Surrey and elsewhere, with scarcely a stone in them as large as a boy's marble, bears no resemblance to some upland gravels, where stones varying in size from that of a cricket ball to a bean form at least three-fourths of the staple material the plants have to grow in, and yet fine healthy plants are met with blooming abundantly.

Colour of soil is no criterion, for a light grey, bright yellow, and now and then a dark red, as well as all intermediate colours, seem to answer almost as well as the black peat, while occasionally the latter is rejected. Most low-lying peaty morasses are unsuitable, especially those from which peat is dug for fuel. A period of cultivation may bring them into a suitable condition, but such peat is not so in its crude state; indeed, I hardly know what crops are most suitable for low, flat, peaty mosses, scarcely raised above the ordinary water level. I would caution the inexperienced against using this boggy peat in the formation of Rhododendron beds, as I have seen evil results more than once arise from its being employed. I cannot clearly say why it is so, but it would appear that the long period during which the moss has been soaked with water has rendered it unfit, for a time at least, to support vegetation of any kind, except the few species which occupy it in its natural condition, and the Rhododendron is not one of them. I have seen several fruitless attempts to obtain a healthy growth of this plant in situations of the kind referred to.

A soil which of itself contains all that is wanted for the well being of the Rhododendron, is infinitely superior to any mixture of ingredients that the most skilful or scientific operator can make. Although many plants seem to relish the composts made for them, it is but seldom the Rhododendron does so, while very often the worst results follow. Therefore, when the natural soil of the place appears to be favourable to the growth of the Rhododendron, it is best to let it alone. Adding other materials is often injurious instead of beneficial.

When the natural soil presents the features which are favourable to Rhododendrons, try to grow these. The indications are weeds and other natural growths, and after much experience I have found no reason to depart from an opinion I gave many years ago, that one of the best tokens of a soil suitable to Rhododendrons is the common Foxglove, which if seen growing extensively in a wild state, I regard as denoting suitable soil, as much as the Heath, and certainly much more so than the common Brake Fern, although both the latter are generally associated with the Rhododendron when it is left to Nature. Some allowance must, of course, be made for the forms under which each is found; usually the Brake (Pteris aquilina), disappears in tilled ground, but this it not the case with the Foxglove, the latter flourishing in dry ground; while the wild Heath is often found in positions where there is scarcely the depth of soil necessary for Rhododendrons. Amongst trees the presence of Birch and Scotch Fir often indicates a suitable soil, that of the Beech the contrary. Furze is often found along with Heath, but it is not so safe a guide as the Foxglove. Perhaps, however, the Bilberry or Whortleberry may be taken as the criterion of a first-class Rhododendron soil; but this plant is not so widely disseminated as the preceding, and Rhododendrons will thrive well where this highland fruit is rarely met with, often in places far removed from it and similar moorland productions.

A gravelly soil sometimes suits Rhododendrons, sometimes a certain kind of sand is equally beneficial, while now and then ground composed almost entirely of stones, and these often large ones, seems equally serviceable in supplying the wants of the plant. At a short distance from where I write many hundreds of Rhododendrons are growing in a soil of the latter description; stones angular, as if recently broken, being mixed up with a yellowish soil by no means prepossessing in appearance, and the stones forming at least two-thirds of the whole. Many of them are three or four times the size of road metal, and a less likely place for success could not well be found, yet the plants flourish remarkably well in it; and during the hot weather we had last summer I did not perceive indications of any flagging or injury in any of the plants at that place, while at others full-grown plants in prepared beds succumbed to the heat and drought. The situation is elevated, being 400 feet or more above the sea level, and the stones found upon it are hard and well adapted to road-making, although widely different from flint and Kentish rag. It cannot be too well known that the character of the stones found upon land constitutes an important feature, and their too extensive removal has often been attended with bad results.

A very useful soil is often met with in a yellow sandy loam, not the hungry sandy soil which exists in some places, but sufficiently stiff to meet the requirements of many other plants, and which when laid down in grass is often covered with a multitude of wormcasts. Tracts of this character are found in many places, and in such there are healthy quick-set hedges. I am not aware of any soil much better than this for the Rhododendron. A large extent of soil of this description exists near the southern boundary of the county of Kent, and near Tunbridge Wells and other places. It also commonly occurs in Devonshire, and I recollect a friend near Plymouth pointing out to me in a park there the line of demarcation between it and a soil of an opposite character. On one side of this line the Rhododendron grew well, and the flowers of the Hydrangea were blue; on the other side the flowers of the latter were pink, and the Rhododendron dragged on a miserable existence. The soil alluded to does not make even a remote approach to peat, being bulk for bulk much heavier, and in no respect resembles it excepting in its capabilities of supplying the wants of the Rhododendron. Tracts of this kind of soil are met with even in close proximity to the chalk formation, for instance, near Dorking, but they are less common among great breadths of stiff clay.—R. J. B.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

July 24th.

Scientific Committee.—Dr. H. Scott in the chair. Present: Messrs. Pascoe, W. G. Smith, G. F. Wilson, J. O'Brien, D. Morris, Dr. Hogg, and Dr. Masters.

Heteroicism in Fungi.—Mr. Plowright, in acknowledging the letter of thanks addressed to him some time since by the Chairman, on behalf of the Committee, made the following remarks:—"It was my hope when I began my cultures that the general outcome would tend to a lessening of the number of the species of the Uredineæ. This, however, is not the case; on the contrary, I feel convinced that physiological investigation will show that these parasitic fungi are much more numerous than we at present imagine. To take one instance only—that of the Uromyces,

which occurs upon Beans. It is now generally thought that one species is common to most of the Leguminosæ. I have made a number of cultures on this point, and find that when U. fabæ from the common Bean haulms is placed on young plants of Bean, Pea, Vicia Cracca, V. sativa, Lathyrus pratensis, and Ervum hirsutum, Æcidia are only produced on the Bean and Pea; and further, that the Uromyces on Ervum hirsutum applied to the same host plants produced its Æcidium on Ervum only. In the same way the Puccinia which occurs upon the Compositæ is, I find, not one species, as is generally supposed, but that Uredospores from Centaurea nigra, for instance, will not affect Taraxacum officinale, neither will the Uredospores of T. officinale infect Apargia autumnalis nor Lapsana communis. Before the true affinities of these species can be satisfactorily determined numerous and long-continued biological investigations will have to be made, for the hasty grouping together of the various forms, because they occur on allied host plants, is as liable to error as the opposite plan of making every form a species because it occurs on a different host plant."

Malformed Cypripediums.—Dr. Masters exhibited drawings and made comments on several malformed Cypripediums which had been referred to him at a previous meeting. The principal peculiarities in different flowers were the following:—Imperfect development of the lip; adhesion of the lateral petals to the sides of the column, and consequent displacement: disjunction of lateral sepals, and presence of two lips in one flower. The adventitious lip might be the result (*a*) of additional development, (*b*) of sub-divisions of the primary lip, (*c*) of the presence in the guise of a lip of one of the outer stamens (A2), which is usually suppressed. Another flower had three staminodes, one corresponding to A1, and two lateral ones as usual, the stigma being distinctly three-lobed. From Mr. Kimball came a drawing of C. Lawrenceanum, in which the parts of the flower were arranged in crossed pairs. The most peculiar flower was one of C. barbatum exhibited by Mr. O'Brien. In this the general form was triangular, the upper sepal was wanting, the two lateral ones were present; the two lateral petals were also present, but in the shape of broadly ovate segments, more like sepals in shape, but having the position of petals, as well as the little tufts of hairs on the margins, characteristic of the petals in this species. The column was erect with two lateral shields concealing the anthers, while the ordinary median staminode was absent. The style was erect, cylindric, scarcely lobed at the top, and the ovary entirely absent.

Passiflora kewensis. ×—Dr. Masters showed drawings of this hybrid, as also of P. hybrida floribunda, to show how closely similar they were. P. kewensis × was known to be a hybrid out of P. kermesina by cærulea, and P. hybrida floribunda in all probability had the same origin.

Movements in the Shoots of Firs.—Dr. Masters showed diagrams representing the movements, not only of the leader shoot of Abies bifida (firma), but also of the lateral shoots; while the leader shoot gyrates in irregular ellipses, its point being alternately raised or depressed, the lateral shoots not only move from one point of the compass to another, and are elevated or depressed, but are rotated on their own axis, the leaves also being raised or depressed at various angles. These movements of shoots and leaves were very complex, and in all probability dependent on different causes.

Growth of Philadelphus.—Dr. Masters exhibited a drawing of a plant of Philadelphus raised from a cutting in a pot. On shifting the cutting into a larger-sized pot it was found that a dense leash of roots had proceeded from one single point only of the callused end—not from the entire circumference. One lateral shoot only was, in the first instance, produced from the side of the cutting, and this shoot was on the opposite side to that whence the tufts of roots issued. Not till this one shoot had grown to a large size, and produced three or four pairs of leaves with internodes of considerable length between them, was a second shoot produced. From the base of the original cutting, opposite to the first, a third and a fourth were also produced regularly, first on one side, then on the other side of the plant, and nowhere else.

Araucaria brasiliensis.—Professor Henriques, of Coimbra, sent a photograph showing two fine trees of this species growing in the open air in the Botanic Gardens of the University of that city.

The Plymouth Strawberry.—Dr. Masters showed ripe fruits of this curious monstrosity, grown from plants presented to him by Mr. G. F. Wilson. It is an Alpine Strawberry, in which all the parts of the flower are more or less represented by leaves. The plant was mentioned by old botanical writers, but afterwards disappeared, or was so completely overlooked that its very existence was assumed to be a myth. Of late years, however, the plant had reappeared in several gardens, and the correctness of the old writers has been vindicated.

Hybrid Clematis.—From Mr. Noble came specimens of his C. Jackmanni alba. The ordinary Jackman Clematis produces its purple flowers in late summer on the young wood of the year. The white variety, however, produces flowers in the spring, on the old wood of the preceding year, and which are more or less irregular in character, and again flowers on the herbaceous shoots later in the summer, thus showing in one and the same plant the characteristics of two distinct sections of the genus, and affording evidence of the hybrid origin of the plant in question.

Stag Beetle.—From Mr. Roupell came a specimen of Lucanus Cervus, stated to be very abundant this season in certain localities. While the perfect insect, in spite of its formidable appearance, is harmless to plants, its larva is very destructive to the wood of trees.

TRIALS AT CHISWICK.

A MEETING of the Fruit and Vegetable Committee was held at Chiswick on July 26th. Present—Harry J. Veitch, Esq., in the chair; Messrs. Lee, Warren, Pearson, Ross, Rivers, Marshall, Norman, and Denning.

The collection of Peas growing in the garden was further examined. Dr. Hogg, from Messrs. J. Veitch & Sons, was noted as a very fine stock. Midsummer Green was condemned as worthless. Optimum (Laxton), a tall green Marrow, having large handsome pods resembling Telegraph, was approved. Prince of Wales was noted for its extra-ordinary cropping qualities. Pride of Kent (Divers) and Gloria Mundi (Yates) were considered to be Ne Plus Ultra. The *Abbot* (Hurst & Son), a wrinkled green Marrow resembling Telegraph in appearance, but of superior quality, was greatly approved, and received a first-class certificate. Reliable (Laxton) a dwarf green wrinkled Marrow of the Scimitar type, was approved for its free cropping qualities and well-filled pods. Empress (Eckford), a tall green wrinkled Marrow, was approved as a good cropper and of good quality. Ne Plus Ultra Seedling (Culverwell) was considered a good stock of the old variety.

A collection of autumn sown Onions was inspected, the various types and selections of White Spanish, autumn sown, were noted as superior to the Tripoli section this season. Bailey's selected White Spanish (Veitch) was highly commended by the Committee, being considered the best selection.

Tomatoes were inspected. Messrs. J. Veitch & Sons submitted examples of *Raspberry Superlative*, referred from the meeting at Westminster, together with examples of Lord Beaconsfield and Semper Fidelis for comparison. They were considered quite distinct. Superlative, being far superior, was awarded a first-class certificate.

Mr. T. F. Rivers submitted examples of a seedling Peach and Nectarine raised from the Nectarine Peach. The Nectarine was remarkable for its enormous size, being 10½ inches in circumference, and 10 ozs. in weight.

THE COMMERCIAL REALISATION OF FRUIT.

A CORRESPONDENT sends us a report of a paper on the above subject that was read by Mr. D. Tallerman at a meeting of fruit growers in Kent early in the summer, and asks for its insertion in the Journal. The subject is discussed from a mercantile rather than a cultural point of view, and as suggestive hints are furnished we comply to a large extent with the request alluded to.

FRUIT FARMING.

Taking this as a branch of agriculture for special consideration, upon looking at the actual results obtained (so far as can be ascertained) by home and foreign fruit farmers they exhibit a most alarming difference to the detriment of the former. The estimated results per acre are not so accurately obtainable for orchard produce as for Wheat, Potatoes, hay, &c., which are cultivated on a large scale, and the gross yield weighed, thus furnishing the data by which the actual result is known; but taking the estimate of experts on this side, and the actual known and published results that have been obtained in America and Canada, a fair basis is obtained for arriving at a conclusion. In an estimate of the value of our crops recently made by Mr. James Howard, whose ability to perform the task will be freely admitted, and whose published estimate remains unquestioned, it will be found that he places the value of orchard produce at £20 per acre, which on the 200,284 acres in cultivation throughout Great Britain makes a total value of the crop £4,005,680 sterling. Looking to the known revenues derived from fruit cultivation in America, it will be found to range from 200 to 300 dollars per acre, or from £40 to £60 per acre, while in Canada it was authoritatively stated at the last annual meeting of the Nova Scotia Fruit Growers' Association, in a paper read by Dr. Henry Chipman, that the known cash returns obtainable for the yield per acre were 300 dollars, or £60 for Apple crops, and 664 and 648 dollars per acre for Gooseberries and Currants, in 1886 and 1887, being £135 and £124 per acre respectively. In accordance with these results our home fruit farmers should have realised the additional sum of at least eight to ten million pounds sterling for produce of the 200,284 acres of land they had under cultivation. This it will be admitted is an enormous amount, and as that or any portion of it would have been extra profit, it is of a sufficiently serious character to command the most earnest attention of all engaged in that particular branch of agricultural industry. In considering the difference in results, the means by which they are secured naturally come under notice, and this brings attention to the commercial operations attending realisation, and when the closer these are scanned the more evident it is that they in a great measure arise from the varied course of procedure.

COMBINATION.

This is largely practised abroad, and invariably leads to good results, and it is capable of yielding more beneficial advantages to the fruit farmers than to any other of the branches of cultivation connected with agricultural industry, inasmuch as with care and tact it may tend to double, treble, and in some instances quadruple the amount receivable for portions of their crops, without in any way adding to the cost of production, and not materially affecting those of preparation. It is interesting to follow the course fruit farmers of other countries would pursue if they occupied Kentish lands for cultivation, and had to deal with and realise its products.

The Canadians would forthwith concentrate themselves and establish an association for their mutual advancement and other organisations in every district, the members of which would meet and exchange notes,

experiences, and opinions ; they would hold their quarterly conventions of delegates from each and all of the district societies of their province, who would disseminate their views and conclusions, and do their utmost to spread all the most interesting information connected with their particular industry in the most practical and effective manner possible ; and so far from being exclusive and isolated the greatest pleasure of those attending would be derived from the largest and most personal amount of information they could furnish, which, being duly recorded, printed, and published in their societies' transactions, is distributed far and wide in all directions for the benefit of their own members and other colonists. After supplying their local markets and making shipments of some of their Apples, the Canadians would, by means of a drying stove, or hot-air chamber, extract the moisture from the remainder of their crop, putting it into a condition by which it will readily keep, can be easily packed, economically transported, speedily sold, and greatly improved in value.

The Americans in Kent would follow much the same course, but would not be content to simply dry or evaporate their fruit crop, but would deal with it in a number of ways. They would dry some portions in the sun ; other portions they would preserve in tins which they call canning, some of the fruits would be put up in their own juice for cooking purposes, and some in syrups for dessert use ; portions would be made into a preserve, which they term "fruit butters," while considerable quantities would be sent into a cold store, so as not to overload the markets with green fruit during the middle of the season when everything is cheap. The markets in the locality and at a distance would be gradually supplied, and what is sent for sale would be carefully sorted into qualities and sizes, and packed into small boxes, baskets, or crates that are readily and safely transmissible by refrigerator cars or portable cool chambers from the fields of the south to the markets of the north, east, and west. The American at home recognises and advantageously puts into practice two golden commercial principles unknown to the farmers of this country. The first is, that the nearer their packages of produce are to the requirements of the consumers the less number of middlemen and handling is required in its distribution ; the second is, that by properly and effectively classifying the contents of their packages, his produce is in a position to reach distant and unknown purchasers in every direction and at any distance, who can safely purchase by the known description ; whereas if it is packed in a general and promiscuous manner—the same as is done by the English farmer—it must of necessity be sent to an adjacent market for disposal (where the sale is limited) to those that can attend it.

In this way the Americans exhibit a sound commercial knowledge by their practice ; they command an unlimited number of buyers, and can supply bare markets where prices invariably rule high, while the English producer is confined to the one local market and those that attend it, which is invariably glutted, and prices rule low. Americans if in Kent would make short work of the railway difficulty from which Kentish farmers now suffer. Before a day was over they would promptly meet as a body, and grasping the position would deal with it in a straight-away fashion, and in less time than it would take an English farmer to get up a good grumble the Yankees would establish and be running a water communication by means of punts, barges, boats, and other vessels into all the accessible spots that could be reached by sea, river, or canal, where a basket of fruit or other goods could be got to be carried away ; the contest, fixed and determined, would last until the railway authorities understood the position and made reasonable terms.

The Frenchman in Kent would act quite differently ; he would make up as much fruit as he could into dainty little boxes or baskets packed as tastefully and carefully as if they were wax flowers, marvellously matched in size, colour, and character, so as to tempt their purchase, and by their luscious appearance give pleasure to the consumer, while large quantities would be preserved by being boiled in sugar and converted into crystallised dessert fruits of various kinds.

The Italians and Portuguese would preserve their surplus crop by converting them into fruit pulps, that they might be used at a later season for domestic or manufacturing purposes, that could be easily and cheaply transported and sold at any time.

While the Spaniards, Turks, Bosnians, Greeks, Cypriots, and Algerians would dry their crops the same as they now do their immense supplies of Plums, Figs, &c., that they at present cultivate in their respective countries. In fact, transplant fruit from any part of the world into Kent, and each and all would do something that would tend to give an extended market, and consequently a better value to the bountiful gifts with which Nature endows this delightfully charming county ; while the general and unanimous impressions that would be felt would elicit expressions on all sides, and in all languages, at the careless and utterly wanton single course pursued by Kentish farmers in recklessly packing their choice soft fruits into the enormous sieves they now do, and sending them anywhere, anyhow, to be disposed of at any price, would not tend to raise Kentish farmers in their own estimation, did they hear and understand the remarks that their course of procedure give rise to.

Strange as it may appear at a first glance, it will nevertheless be found to be true, that the courses pursued by all fruit farmers abroad could in most instances be readily, profitably, and more advantageously carried on by fruit farmers at home, and more especially by Kentish farmers in their own county than by the foreigners in their respective countries, inasmuch as their districts are within easy reach of the great centres of consumption of the kingdom, and a few hours bring them into connection with nearly 40 millions of consumers, and with all those parts of the country where little or no fruit is grown, but where large populations reside, and much fruit would be consumed, if it were readily available as an article of luxury or food in any of the numerous forms that have been mentioned.

Fruit-growing in the United Kingdom may be said to be a distinctive English industry, as while the total orchard area of England is 195,071 acres, that for Wales is 3,341 acres, and for Scotland 1,872, or 200,284 acres in all, the total area for market gardens being 60,850 acres, of which England possessed 36,650. It is curious to note that of the orchard area six English counties comprise two-thirds of the total—viz., Hereford 27,112 acres, Devon 26,414, Somerset 23,640, Worcester 18,527, Kent 18,296, and Gloucester 15,500, being 129,489 acres in all. This concentration of fruit cultivation should favourably lend itself towards the success of any movement towards the introduction of new means of collection, preparation, distribution, and realisation.

EVAPORATING FRUITS.

There is a known natural law in existence which teaches us that all animal and vegetable products may be preserved for an indefinite period by the extraction of their liquid constituents, that therefore results derivable by the use of an apparatus similar to the Blackman ventilator in connection with the kilns and oast houses that largely exist throughout the county of Kent may lead to bringing into active operation an economical and speedy means for the preservation of a large amount of human and animal food. The actual ultimate result from this operation it is not possible to foresee at present ; but I am satisfied that, if the men of the country who think for themselves devote some consideration to the subject as to how this principle of desiccation can be practically utilised in the direction I have pointed out, beneficial results of a marked character will reward the country for their labours. Combination, refrigeration, and evaporation can be made to yield results to the fruit farmer little short of marvellous. By their means the length of the fruit season may be materially extended. The entire yield of all crops utilised, their commercial value greatly increased, and an unlimited supply of home-grown fruits made available as an addition to the food supply of the nation. The avoidance of these self-inflicted losses would do much to benefit the agricultural interests. Taking the various systems practised abroad that could be speedily brought into active operation in Kent, it will be found that they may be divided into separate classes as follows :—

1st, Primarily, the marketing of green fruits to ensure highest prices is essentially a matter of commercial experience. To this end all fruits should be properly sorted and classed as to character and condition into "Choice," for special high-class trade ; "Prime," for first-class trade ; and "Ordinary," for general trade.

2nd, Assorted as to description into firsts, seconds, and thirds sizes.

3rd, Choice and prime fruits should be packed into clean, bright, and carefully made packages, so as to present to the buyer a luscious, attractive, and tempting appearance. Ordinary fruit may be packed for general sale in smaller baskets than at present.

4th, It is important to act on the principle that the smaller the package the wider the area of consumption, and the better the contents will keep in good order and condition.

5th, Also that selection as to size and colour with regular packing are the best means for ensuring speedy sales in extended districts at good prices.

6th, Growers should remember and act on the fact that a barely perceptible taint or speck that is carelessly dealt with by the packer at the farm will in a short time become an odious blemish, and by the time the fruit reaches the market, not only becomes spoiled itself, but damages other fruit and spoils its value.

7th, A good crop requires marketing with commercial experience and judgment. A combination of growers to amalgamate their crops in order that large selections of particular descriptions may be made available for disposal in special directions, and in districts where required, will lead to large prices being received.

8th, Specially choice goods, suitably packed for display in retailers' shop windows, will at all times command extremely high prices.

9th, Inferior specimens of fruits packed with prime specimens reduce the value of the prime.

10th, Goods packed, branded, and numbered that their contents and condition may be known without a personal inspection, will be sent for by purchasers in remote parts, whose convenience or ability does not allow them to attend a market personally,

COLD STORAGE FOR FRUITS.

1, Green fruits may be safely stored in a cold, dry air chamber, and retained in a fresh condition for two, three, or four months at a temperature of 40 to 43 degrees Fahrenheit.

2, This temperature may be maintained in a perfectly insulated room of considerable extent by a moderate size machine.

3, The machines for refrigeration or the production of cold air vary in character, the principal systems being—

4, Mechanical, by the compression and expansion of air.

5, Chemical, by the conversion of ammonia—ether or sulphuric acids into gases.

6, Both systems are subjected to a great number of variations of detail, some of which are protected by patents.

7. The ammonia system is the one most generally employed, as it can be readily used for the production of ice when the cold air is not required for other purposes.

8, A cold air chamber is nothing more than an efficient larder.

9, To preserve by cold air it is but necessary to spread the fruit out on trays or shelves, and allow them to remain until required.

10, By this means of preservation a small quantity can be at all times withdrawn, and regular supplies sent to market or otherwise disposed of at good prices, for a long time after the termination of the ordinary fruit season and when the bulk of fruits are disposed of.

(To be continued.)

CHEALS' PATENT FLOWER SUPPORT.

Messrs. J. Cheal & Sons, Crawley, Sussex, have recently exhibited a simple method of supporting flowers in small vases or glasses, which will be found useful by some who have little time to give to work of this character. The supports are formed of wire, as shown in fig. 12, a series of small arms terminating in a ring springing at

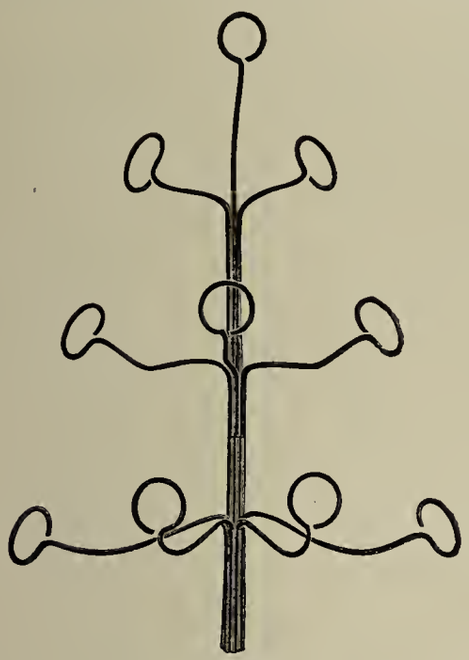


Fig. 12.—FLOWER SUPPORT.

different levels from the same stem, either only on one side or radiating in all directions. When filled with single Dahlias, for which they are especially adapted, they appear as in fig. 13, but any other flowers can



Fig. 13.—FLOWER SUPPORT, FILLED.

be similarly employed, and some are made less formal than the Dahlias. The flower stalks are drawn through the rings and passed into the vessel of water at the base, using sufficient foliage to conceal the frame and impart as much grace as possible. If not packed too closely and formally they have a rather pleasing effect.

SAVING THE LIVES OF FRUIT TREES.

In March last I had from a nursery a tree of a new Apple. It had been budded the previous year, had a good root, and one straight shoot. The soil had been shaken from the roots, the whole was wrapped in straw, and sent per parcel post, being four or five days on the road. When it reached me the roots were quite dry, and the shoot which formed the top was shrivelled. I placed it in one of the basins of the fountains close by, where it remained four days. When I went to look for it it was swimming on the surface of the water, but a very different tree from the withered and three-parts dead specimen I had cast in on its arrival. The wood, roots, and buds had become quite fresh and plump, and all parts were in capital condition for planting. It was carefully planted at once, and at the present time it is a luxuriant little tree, with many side shoots. Had it not been for its prolonged ducking I feel sure it would never have come into leaf, and I am of opinion that Roses and other plants which are sometimes received in a shrivelled condition would be greatly benefited by being subjected to hydropathic treatment for a few days before being planted.—J. M.

ARTIFICIAL MANURES.

It was rather interesting to observe how in a recent contribution Mr. Dunkin proceeds to demolish and explain away all "erratic statements and impracticable theories," as he terms them, when they take the form of opposition to his ideas. How far he has been successful I will leave your readers to judge, as it will serve no useful purpose to prolong this debate now that I have obtained definite answers to the three principal points in this controversy. But as your correspondent desires a ray of light to disperse the darkness in reference to the mode in which we carry out some of what to him appear impracticable theories, I will endeavour to briefly explain our procedure. In the first place the scene of our operation when potting a miscellaneous collection of plants does not present the spectacle Mr. Dunkin's fervid imagination leads him to fancy. True we have various receptacles disposed around, containing alumina, humus, oxide of calcium, silica, carbon, phosphates, potash, and ammonia, from which we derive the materials for our compost heaps. Now if I was the rabid scientific enthusiast my adversary implies he should employ these terms when giving directions to form a potting material, but on the other hand the common terms, loam, leaf mould, sand, lime, charcoal, and artificial manure suffice, and then when a particular plant requires attention we proceed to compound for its need, and by having all the elements for a plant's support as far as its roots are concerned at hand and our mind well stored with knowledge, whether gained by scientific research or experience and observation—it matters little so long as it guides our hands in measuring out "a properly proportioned combination of the elements needed"—the work will be facilitated, and the results looked forward to with confidence. How Mr. Dunkin fancies that I do not take into consideration the various stages of a plant's growth I am at a loss to understand, for how does he think it possible to arrive at anything like an accurate knowledge of the elements needed unless this point has careful consideration? and in a previous article having this in view I mentioned the desirability of having the different chemical constituents of the plant food separately, so that they could be combined by the scientific cultivator in such proportions and at such times as his judgment tells him is necessary.

There is another point in Mr. Dunkin's correspondence to which I would wish to draw attention. It is where he repeatedly uses the words "minutely" and "nicely" instead of "properly" in reference to the system he so strenuously opposes. These adjectives are merely creations of my adversary, and have never been used by myself in any stage of the controversy, and in the way used are, I presume set up by your correspondent, so that he can have the satisfaction of levelling his sarcasm at such delicate operations in the practice of compounding plant food, which he considers should be performed in a more general method. Of course a properly proportioned combination would in a certain sense be a minutely and nicely proportioned one, but not in the way that your correspondent endeavours to construe the fact.

One place especially where I take exception to his remarks is when he says "Experience teaches us that for practical purposes no better results are obtained by the use of these minutely proportioned mixtures so long as the principal constituents of plant food are present." Now, if Mr. Dunkin seriously believes the truth of this statement, and intends to follow the "rough and ready" mode of cultivation given in this quotation, I should advise him to consign to the flames the works of Wagner, Parks, Ure, and other authorities he quotes from, if he does not wish his conviction on this point to undergo any change. All works on chemistry, whether practical or scientific, that I have as yet seen, point to minute precision as essential in the study and practice of chemical matters. In gardening, as in any other occupation, attention to trifles is undoubtedly the key note to success, though I must admit that results are sometimes achieved that apparently do not seem to favour this view

still, I affirm a larger per-centage of successes are attained through care bestowed on minute particulars than otherwise.

In reference to the lime question, as answered by Mr. Dunkin in the quotation he gives from a scientific authority—instead of a note based on his practical experience, as I expected, and which to be consistent he should have at least coupled with the scientific part—I have the temerity to criticise both from a practical and scientific point of view. The transfer of the subject of debate from old kitchen gardens to grass lands by your correspondent puts some slight complications on the case, but not material enough to hinder its discussion; but keeping to kitchen garden soils and their treatment, I will endeavour to show where in my estimation the dual use of lime is to a certain extent anomalous. Take, for example, a piece of ground that has perhaps for centuries been used for raising garden produce, and has of course been subjected to heavy dressings of farmyard manure; this causes a breakdown of "proper proportions" in the constitution of the soil, more humus being present than silica, consequently the soil presents a close inert mass of black matter, difficult alike for the passage of air, water, or heat, and consequently healthy root action. To correct this unhealthy state lime is a powerful agent, and judicious trenching another. Lime, in its chemical and also mechanical action, as set forth by Parks, I quite agree that the explanation why it is so admirably fitted for that purpose is a very lucid one, its action when first applied being purely chemical; afterwards, when its power in that direction is exhausted, it forms a valuable mechanical agent in contributing to the porosity of the soil. Now, taking the case of sandy soils, and the benefit likely to accrue from the application of lime, I must admit that my experience is so limited that I have not yet observed any sandy soils "that have received heavy dressings of farmyard manure for years, till by their very richness they become distasteful to many crops." Again, take the effect of an application of lime on a thorough sandy soil: does the dressing produce as profitable results in causing the soil to be more retentive, as it does on heavy land in making them less retentive? I venture to say, emphatically, No! Because the scientific study of the action of lime reveals to us that it would have some slight effect in causing more moisture to be retained on its reversion into chalk, I do not consider it wise to put too much stress on its usefulness in that direction when there are other more powerful agents that will accomplish this object more effectually, such as humus, comprising all kinds of organic remains that naturally have power of retaining moisture, salt, nitrate of soda, sulphate of ammonia, and other chemical compounds that have an affinity for water. These in my opinion would be far preferable to lime on a sandy soil where the object was to promote its fertility.

As to my evasion of some of the arguments as mentioned by Mr. Dunkin, I think they are more imaginary than real; still, to satisfy his desire for an argument or explanation against his statement "that while certain elements are absorbed by the soil and only given up again in small quantities, while others remain freely moveable, and a residue not quickly taken up by the plant would be wasted," I will supply him with one in an extract taken from a previous article of his, where he says, "I do not believe that any one kind of manure, whether artificial or otherwise, contains all the constituents necessary for supplying the right kind of food for plants generally," and further on, in a direct question he says, "As to the possibility of producing a perfect plant food, I consider it may be accomplished in exceptional cases, but would be too expensive a system to become general for all classes of plants." Now the explanation of absorption and loss lies between these two statements. If the food administered does not contain the right proportions, those elements in excess, if volatile, will be lost, and the plant have to go short of those not present. The question is then one of cost, as to whether it will be more expensive to try to manufacture a perfect plant food, or let the chance application suffice, and not trouble as to any residue that would be wasted. I think Mr. Dunkin will agree with me that the former course would be the best, and I was glad to see he has so far admitted the possibility of a perfect mode of applying plant food that would obviate this difficulty. As the settlement of the change of food theory rests on the question, I think I may be pardoned for pointing to a quotation from your correspondent, "J. M.," page 274. He says, "Really good artificial manures, such as are advertised, contain the very essence of plant life," and again, on page 384, another correspondent, "B." says, "If we consider the matter I think it possible to procure a perfect plant food," so that unless Mr. Dunkin obtains more independent support for his views, and does not produce more convincing arguments, I shall consider that he has failed to establish his case.

In conclusion, I beg to inform Mr. Dunkin that I have endeavoured to keep in mind throughout the foregoing his advice to me expressed in the motto, "Be just before you are generous," and have, as far as possible, kept the justice of my expressions foremost, and if he should unfortunately fail to obtain the verdict, I will do my best to exercise the latter part of this excellent advice on his behalf.—M. Coombe, *The Gardens, Ashton Court, Bristol.*

CORDON GOOSEBERRIES.

On paying a visit last Thursday evening to Mr. E. Durrant, a well-known amateur in our village, I was surprised to see the splendid crop of Gooseberries he had growing on the cordon system. Never having seen this system carried out before with Gooseberries, I asked if they would count the fruit on one of the trees, when they found 264 Gooseberries on a tree 3 feet 6 inches high. I was informed that the trees were from three to eight years of age, and had been pruned on the spur system, the shoots kept well pinched-in during the summer. They have never failed in having a good crop each year. I have forwarded nine fruits taken from the tree. The advantages I see to be gained in growing trees like this are that the fruit can easily be gathered, is kept cleaner, easily protected from the birds in spring, and afford an almost certain crop. —A. J. Brown, *Lindfield, Sussex.*

[The fruits sent were very fine examples, and we have frequently seen similarly good results both with Gooseberries and Currants. One successful exhibitor in Perthshire grows all his best fruits in this way.]

STEAM AS A SUPPORTER OF COMBUSTION—WATER GAS.

The enclosed clipping is from the *Yorkshire Post*, and contains an article on "The Manufacture of Water Gas," which, to a certain extent, verifies the ideas I advanced on "Steam as a Supporter of Combustion" when discussing the advantages of water in ash-pits with Mr. Bardney and others. Perhaps you will be able to find space for its insertion in the Journal, as the facts therein contained will tend to convince those in doubt of the economy obtained by the aid of steam or water vapour passing through the furnace fire.—J. Riddell, *Duncombe Park.*

Under the direction of Mr. Samson Fox, C.E., the managing director, Mr. Lawrence Wildy, the engineer to the Leeds Forge Company, has recently erected at the company's works at Armley plant for the manufacture of gas from water, and at the present time the product is being used there for illuminating as well as for metallurgical purposes. In this country the making of water gas has not previously been undertaken on a commercial scale, but in many cities and towns on the Continent, railway stations, churches, hotels, works, and other buildings, as well as the public streets, are lighted by means of water gas, which is also used at one place for the purpose of driving the waterworks engine. There can be very little doubt that its successful installation and application at the Leeds Forge will lead to its extensive use in England. Water gas is produced by the decomposition of steam in passing through a mass of incandescent fuel, the resultant gas being hydrogen and carbonic oxide in about equal proportions. Ordinary coal gas contains about 50 per cent. of hydrogen, from 40 to 41 per cent. of marsh gas, and a small per-centage of other heavy hydro-carbon gases. Water gas, on the other hand, is made up of about 50 per cent. of hydrogen and carbonic oxide, and is entirely free from marsh gas and the heavy hydro-carbons. Water gas is consequently a non-illuminant in itself, but for lighting purposes it may be carbureted or used in conjunction with a Fahnejelm comb. This comb, which is fixed immediately over the gas-burner, is made of magnesia, with a small per-centage of bonding material, which is pressed when in a plastic state into the form of fine rods about the thickness of the lead of a pencil. It is claimed for water gas that it could be put to the same purposes as coal gas, and with greater advantage. First, as to its use in the foundry and the forge. The temperature of the water gas flame is something over 5000° Fah., and is 50 per cent. greater than that of the Siemens or producer gas usually employed for metallurgical purposes. Consequently for welding or melting purposes, and where a particular flame is required, water gas is the most suitable heating medium. It is pointed out that the chief reason why water gas produces so intense a flame is that the amount of air required to burn it is only one-half the quantity necessary for burning coal gas, while the area of the flame is not more than one-sixth that of the latter. In this way we get a greater concentration of heat, a less area of flame for radiation, and a very much smaller per-centage of diluent nitrogen, which under any circumstances has to be heated up to the same temperature as the furnace or bath of metal.

The production of water gas, while, as before stated, not absolutely new, has never previously been carried out upon the same principle as that adopted at the Leeds Forge. Hitherto the water gas has been to a large extent diluted with generator gas and other products. At the Leeds Forge the water gas is collected separately and the producer gas is used for heating furnaces or boilers and in the annealing apparatus. In working the Siemens-Martin furnace the advantage of using water gas is said to be enormous. When the ordinary producer gas is employed the furnace will yield about twelve charges per week of six days. By mixing water gas with the generator gas the charges may be more than double, as many as thirty charges per week having been got out of a single furnace. In other processes of iron manufacture, such as steel melting, puddling, reheating, and welding, the application of water gas has been shown to have many advantages. The product has also been successfully employed in glass making. The plant in use at the Leeds Forge consists of two generators, a scrubber, and gas holder, with Root's blower and a steam boiler. The fuel used is common coke and coal; in fact the cheapest that can be procured. The product per ton of fuel is about 175,000 cubic feet of gas, of which from 30,000 feet to 35,000 feet is water gas, and the remainder high quality generator gas. The cost, including interest, depreciation, and supervision, is about $4\frac{3}{4}$d. per thousand cubic feet of water gas, and about $\frac{3}{8}$d. per thousand of generator gas. When used for illuminating purposes the water gas is deprived of the small proportion it contains of bisulphide of carbon, which is regarded as the great bugbear of coal gas producers. It is this material which when burnt produces sulphuric acid, so disastrous to

gilding, pictures, furniture, and drapery, and so injurious to animal and vegetable life. Plants and flowers are said not only to exist, but to thrive in rooms where water gas is used as an illuminant. Moreover, the heat generated by water gas when employed for this purpose is set down at less than half of that given off by coal gas, and the entire absence of the heavy hydro-carbons in the latter precludes any possibility of smoky ceilings, as no free carbon can escape unconsumed from the water gas. The colour of the light stands midway between the electric arc light and the soft electric incandescent lamp. From the purple rays of the former and the yellow tint of the latter it is entirely free, and it more resembles the natural sunlight than any artificial illuminant yet produced.

The apparatus used for generating water gas is exceedingly simple, and entirely automatic in its action; indeed, any mistake on the part or the gas maker is impossible. Since the plant has been devised no case of accident by explosion has been heard of. As to its safety for domestic purposes, although the water gas usually made possesses no smell whatever, involving the possibility of an escape remaining undetected in the household, yet by an ingenious contrivance introduced by Mr. Wildy, a strong smell is imparted to it as there manufactured. This does not affect its illuminating power, but unmistakeably proclaims its presence. A four months' experience at the Leeds Forge has shown the adaptability of water gas to the various uses mentioned.

Coming to the details of its manufacture, it may be stated that the apparatus used in its making consists principally of a generator, in which fuel, by means of a blast, is raised to a high temperature. Preferably the fuel should be of considerable depth. The blast having been turned off, steam is injected into the column of fuel, and the steam becomes decomposed, producing hydrogen and carbonic acid. This latter gas, in passing through the lower strata of incandescent fuel, is converted into carbonic oxide, which passes away with the hydrogen through the scrubber into the gasholder. The mechanical appliances by which the air and steam are alternately admitted, and the generator gas and water gas alternately led away, are cleverly conceived. One valve serves the double purpose of admitting the air and educing the gas. This valve slides on a three-ported face, connected with a chamber which is water-cooled. The valve itself is also cooled in a like manner, so that the intensely heated effluent water gas passes harmlessly over a common cast-iron surface without running any risk of damaging it. In the slide valve extra passages are cut in order to allow of the escape of the small residuum of air or gas which may be left in the passages or ports, and which, if allowed to mix, might cause an explosion. This valve is the invention of Herr Blass of Essen. The levers which operate this slide valve also move the blast valve, opening it when the slide is set for blowing the fuel and closing it when the slide is thrown over to the gas eduction port, and at the same time opening or closing the steam valve according to the position of the slide valve for gas-making or for blowing. The outlet for the generator gas is opened and closed by the same mechanical means, so that one lever, being thrown over, reverses the whole series of valves, and nothing is left to the possible absent-mindedness of the attendant gas maker. By this arrangement the risk of accident is completely obviated. The lower part of the generator, which is subjected to a very high temperature, consists of a single steel plate, flanged so as to form a cup. The ring made by this cup is continually full of water, this device preventing any destruction owing to the intensely great heat. It will thus be seen that the gas is produced intermittently. The rate of production is about 1000 feet per minute, at intervals of ten minutes. Each generator in use at the Leeds Forge is capable of turning out about 17,000 cubic feet of water gas per hour, with the consumption of about half a ton of the commonest and cheapest fuel. At the Leeds Gasworks a ton of coal produces 10,000 cubic feet of coal gas. The coke remaining after the extraction of the gas from the coal weighs some 13 cwt. or 14 cwt., and this coke will produce 23,000 cubic feet of water gas and 98,000 cubic feet of generator gas. In the manufacture of water gas at Leeds Forge canal water is used.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Late Succession Trees.*—Every attention must be given the trees in syringing to keep the foliage free from red spider, and in watering the inside borders. It will be an advantage to mulch the inside border with short somewhat lumpy or open material, as stable manure freed of the straw, but it must not be used in too great quantity at a time in the fresh state, or the ammonia vapour will seriously injure the foliage, particularly if the lights for ventilation are kept close, a little ventilation constantly being a safeguard against scorching, soft and attenuated growth. The value of using manure rather fresh as a mulch is that the ammonia given out is inimical to insects and invigorating to the plants, the waterings directly making it available for taking up by the roots, and by being lumpy or open atmospheric influences have freer access for effecting the assimilation of food in the soil than when it is practically sealed by a close soapy mass of little manurial value. The shoots must be regularly tied-in, allowing space in the ties for the swelling of the shoots. To assist the colouring and ripening of the fruits they should be exposed as much as possible to the influences of sun and air by removing or shortening some of the foliage where too thickly placed. Where the fruit is on the under side of the trellis the shoots may be untied and regulated, so as to bring them with the apex to the light, supporting them in position by laths placed across the trellis. Discontinue the syringing when the fruit begins to soften, and lessen the supplies of water, but on no account must water be withheld to the prejudice of the health of the trees. A piece of hexagon netting placed below the trellis, and so arranged as to form pockets to save the fruit from a long run against other, will prevent any fruit being bruised should they fall. Both top and bottom or side ventilation will be necessary constantly after the fruit commences ripening.

Late Houses.—There is more gumming of the growths than we have before experienced. The shoots are affected at the base of the current year's growth, and soon collapse. The most remarkable thing about them is that of their not being unduly vigorous. It is clearly a case of disorganised tissue through the cold in the early stages of growth not being favourable to assimilation. Growths so affected should be cut clean away below the gummed part and be burned. In autumn as soon as the wood, buds, and foliage are sufficiently matured lift the trees carefully, and before the leaves have fallen, preserving the roots that proceed from the collar with, if possible, some soil, laying the roots nearer the surface and fresh material or the old, adding a sixth of old mortar rubbish passed through an inch sieve, carefully removing any portions of wood as laths, &c. If the soil be light add a fourth of clayey marl in as fine parts as practicable. Make it thoroughly firm. Water if necessary; indeed, the soil ought to be in a condition for proper firming so that water will be necessary only to settle the soil about the roots, mulching with 2 to 3 inches thickness of rather rough and fresh or not very decayed manure. The lifting, the addition of calcareous and silicious matter, and the firming will effect a perfect cure. The blossoms will set, the fruit stone, and it will be perfected without stone-splitting. Continue syringing the trees as often as necessary to check red spider, but avoid keeping the foliage constantly dripping with moisture. Inside borders must be well watered and mulched. Tie-in the shoots regularly and evenly, keeping them rather thin. Stop any gross shoots, or preferably cut them clean out, thereby causing a diversion and more equalisation of the sap and vigour throughout the tree. When the fruit commences swelling after stoning close the house somewhat early in the afternoon, let the temperature rise in fact to 85° or 90°, ventilating a little before nightfall. Increase the ventilation early, and keep through the day from 75° to 85° whenever practicable. The fruit is so late that every possible advantage should be taken of the solar heat alike to perfect the current crop and the wood and buds for the ensuing season.

CHERRY HOUSE.—Let the trees now be as fully exposed to air as the house will admit. Remove the roof lights, which is the best means of arresting premature growth, to which the Cherry when forced year after year successively is liable. The leaves from their hard texture are not very inviting to red spider, but black aphides will prey upon them unless prevented by syringing or an insecticide. If black aphides appear at the points of the shoots syringe with tobacco water. The border must not be allowed to become parchingly dry, but have copious supplies of water, and if weakly employ liquid manure, as poverty of bud-perfecting means collapse of the fruit after setting if it get beyond the blossoming. Trees in pots must be regularly watered and syringed to maintain the foliage in a healthy state as long as possible.

CUCUMBERS.—These have been more crooked and stunted generally than we remember for a long time, due no doubt to the cold, wet, dull weather. In fine weather fire heat may safely be dispensed with, but in such dull and wet weather as we have lately experienced fire heat will need to be afforded to maintain a suitable temperature. Strive to preserve a healthy root action by a bottom heat of about 80°, keeping the plants well supplied with water but not in excess of the requirements, as a sodden soil is fatal to the activity of the roots, using liquid manure whenever vigour is required, or it is necessary for its maintenance. Let the plants be regularly examined once a week, removing the exhausted growths to make way for young bearing wood. Syringe moderately at closing time, doing so as early in the afternoon as the brightness of the sun, closing for a couple of hours to run up to 90° to 95°, then admit a little air for a short time to allow of the rank steam or moisture to escape, having the foliage fairly dry before nightfall, especially if fires are dispensed with. The Cucumbers for autumn fruiting should now soon be planted on ridges or raised hillocks moderately firm, maintaining a moist and genial atmosphere, and they will grow away freely and show fruit in plenty shortly.

Any frames at liberty may yet be planted with Cucumbers upon a bed of fermenting materials, which will give a supply of fruit in September, and continue up to near Christmas if due regard be had to lining the bed and to protecting the plants by mats over the lights at night in cold weather.

MELONS.—the weather has been of late anything but favourable, especially to late crops in frames, which have neither set nor swelled well, it being a remarkable feature that late Melons on dung beds grow very luxuriantly, and unless the foliage be kept thin the fruit sets very indifferently, and after setting refuses to swell. Some growers

object to the use of the knife amongst the plants whilst the fruit is setting, but we hesitate not to cut out superfluous growths whenever the necessity for it arises, and with the best results. Crowding the foliage tends to nothing but disaster. The blossoms do not set well, the fruit swells badly, and worse still, they have large seed cavities, are hollow, and have neither weight nor quality. Copious supplies of water are necessary to plants swelling their fruit about twice a week in bright weather, once a week or more distantly in dull moist weather. Sprinkle overhead at closing time, those in houses being well syringed both ways in the afternoon of bright days, and a good moisture maintained by sprinkling the floors, &c., two or three times a day, which will be all that is necessary in dull weather. Do not neglect to fertilise the flowers daily of plants now in bloom, and to go over the plants frequently for the stopping or removal of superfluous growths. Keep the atmosphere dry when the fruit is setting and ripening. Maintain a bottom heat of 80° to 85°, top heat 70° at night, 75° by day, in dull weather admitting a little air at that if there is a prospect of some sun, allowing the heat to rise to 80°, then admit more air, increasing the ventilation with the increased temperature up to 85° or 90°, closing sufficiently to raise the temperature to 90° or 95° or more. A free circulation of rather dry warm air greatly improves the finish and quality of Melons when near ripening. If canker appears at the collar promptly arrest its progress by rubbing quicklime into the affected parts, repeating as necessary, maintaining a drier and better ventilated atmosphere. If there be any indications of the fruit cracking cut the Vine about half way through a few joints below the fruit, reducing the supply of water at the root, and maintain a dry well ventilated atmosphere.

Strawberries in Pots.—Runners intended for forcing should be transferred without delay into the fruiting pots. The plants for early forcing succeed best in 5-inch pots, or at most in 6-inch pots. Turfy loam, with an admixture of about a fifteenth of bone dust, is a suitable compost, giving preference to loam of a rather strong but friable texture. Pot firmly, keeping the crown of the plants rather high, and allow a depth of about half to three-quarters of an inch for watering. Stand the pots on a hard bottom impervious to worms, in a situation where the plants will have every advantage of light and air, and with due attention to watering and the removal of runners the plants will grow vigorously and mature the crowns early. Plants of the strong-growing varieties intended for successional and late forcing may have 7-inch pots. Plants that were layered into the fruiting pots should be detached after they are well rooted, keeping them well supplied with water, and remove the runners. They should be given a position after their removal from the layered quarters similar to those transferred from small to fruiting pots.

PLANT HOUSES.

Choisya ternata.—Plants that have been grown in frames since they were pruned after flowering will now be better outside. Plunge them in a sunny position, where they will have a chance of thoroughly ripening their wood, for upon this depends whether they flower well or the reverse. When kept under glass the whole season they invariably grow tall, are often imperfectly ripened, and consequently do not flower profusely. Be careful the plants have sufficient water at their roots. Soot water in a clear state is a capital stimulant for this plant, and adds to its beauty by the dark green appearance it imparts to the foliage.

Chorozemas.—This should now have abundance of air; from this time they are better exposed than under glass, only they need protection from such heavy rains as has been experienced lately. If bright weather follows use the syringe freely to insure the foliage remaining free from red spider. Water carefully, but do not allow the soil to become dry or serious injury will result.

Hardwooded Ericas.—Heaths may now be fully exposed, especially all the spring and early summer flowering varieties. Select a sunny position for them, and protect their pots from the burning rays of the sun either by plunging them or by securing round the pots on the sunny side old mats or bags, anything that will prevent the sun striking direct upon the pots and doing injury to the roots will answer this purpose. Water carefully while the plants are outside, but do not allow the soil to approach a dust dry condition, or their silk-like roots will perish and their leaves eventually will turn brown and fall.

Softwooded Heaths.—These also are better outside than in frames. Full sunshine is necessary to harden and ripen their growths if they are to flower well. The sun will not injure or brown the plants provided they have been grown cool and fully exposed. The only care that is needed is to protect the pots from the sun. If the plants are arranged in beds running north and south the front row and those on the west side only will need protection. The outer rows of plants will afford ample shade for all the other pots in the bed. The pots should be full of roots, and therefore liberal supplies of water will be needed. Keep the material on which they are standing moist by syringing liberally during bright weather.

Epacrises.—The earliest plants have lengthened out good growths, and may be fully exposed the same as Heaths. Protect the pots and subject the plants to the same treatment. Late flowering plants may still be encouraged to grow by keeping them in frames. Abundance of air should be admitted during the day, but the frames may be closed in the afternoon at syringing time before the sun has passed off it.

Cytisus racemosus.—Young plants in 5-inch pots that are standing outside must not be pinched after this date, or they may not flower as freely as desired. If the shoots are allowed to extend they will become thoroughly ripened by the time they have to be housed, and are certain to be a mass of bloom. Water freely and syringe liberally during bright dry weather.

Genetyllis tulipifera.—This and G. Hookeri, if they are to flower profusely, must have the wood thoroughly ripened out of doors. Protect the pots from bright sunshine, and be careful not to allow the plants to become saturated by heavy rains. Boronias, Eriostemons, and other hardwood greenhouse plants of a like nature may with advantage be exposed outside.

Acacias.—Those that have made a good growth may be stood outside after carefully hardening them. If the pots are full of roots weak stimulants may be given them. All that are restricted at their roots may be fed liberally to enable them to make a good robust growth.

FLOWER GARDEN.

Bedding Plants.—Very few of these have made any real progress; in fact, many of them do not fill the beds so well as they did when first placed out, owing to the decay of the old leaves and the formation of smaller ones in their place. Filling up with surplus plants has been largely resorted to in the case of Coleus Verschaffelti, Iresines, Alternantheras, variegated Pelargoniums, and Tuberous Begonias. The three first named are the greatest sufferers from the long spell of wet weather, and it is doubtful if the Alternantheras will be very effective this season unless all blanks are filled in and rains warded off them in some way. Lobelias, Ageratums, Pyrethrums, Violas, and a few other of the hardier kinds are not so much injured, and may yet become more showy; but the Zonal Pelargoniums are in a sad plight, and in warmer weather will grow away strongly rather than flower freely.

Seeds to be Sown.—There are many hardy annuals and perennials which ought to be sown now or during August, in order that the plants may be of good size before the winter sets in. Those that should be sown at once are Alyssum maritimum and A. saxatile compactum, Arabis alpina, Bartonia aurea, Saponaria calabrica, Silene pendula compacta, both red and white, Eschscholtzias, Candytuft, and such Poppies (Papaver) as bracteatum, Marshalli, nudicaule, orientale, umbrosum, and pulcherrimum. Towards the end of August sow Calandrinia in variety. Clarkias, Coreopsis, Cyanus major, Collinsia bicolor and grandiflora, Erysimum arkansanum and Peroffskianum, Limnanthes Douglassi, Gypsophila elegans, Lasthenia californica, Virginian Stock, Venus's Looking Glass, Viscaria cardinalis, and Whitlavias. The seed is best sown on warm borders, the soil of which is in good working order. Shallow drills may be drawn thickly, moistened if at all dry, the seed being sown thinly and covered with fine soil. The seedlings to be duly thinned out where crowded, and may either be transplanted in October to where they are to flower, or this important proceeding may be delayed till the spring.

Layering Carnations.—Propagation by layering is the surest and quickest way of securing a number of serviceable young plants of superior varieties, and which, it should be added, invariably produce during the following season much the finest blooms. Early in August is the best time to commence this important work. First loosen the soil about the plants, then surround them with a depth of 3 inches or more of good compost, nothing being better than a mixture of two parts of fine fresh loam to one of sifted leaf soil, with plenty of road grit or coarse sand added. Next select all the best placed young growths, trim off the lower leaves, and at a convenient distance from the main stem cut half through the under side of a joint, then give the knife an upward turn till a tongue about 1 inch long is formed. Next carefully peg them down so as to bury this tongue as well as the rest of the joints where cut in the fresh soil. It is of importance that these layers be prevented from springing out of the ground again; and to prevent this fairly long and strong pegs, such as may be cut from old birch brooms or Hazel wood, should be used. It is by no means a difficult operation, a very little practice being needed to give the desired confidence. In dry, hot weather, gentle waterings over the foliage may be given every evening, or till such times as the layers are well rooted, when they ought to be detached and either potted up and wintered in frames or planted out in fresh beds. Any border Carnations that have been flowered in pots are seldom of any service the following season, and these are the best to layer. They ought to be planted out either in cold frames or the open borders in sandy, loamy soil, as just advised, not uprightly, though, but in a sloping direction, this rendering layering a comparatively easy matter. See that the old balls of soil and roots do not suffer for want of water till such times as they have rooted into the surrounding soil.

Seedling Carnations.—Those raised last season are wonderfully gay at the present time, and will continue in full beauty for several weeks. Many strains include a good per-centage of handsome varieties; even the singles among them are very pretty and serviceable, and all are much more floriferous than named varieties from cuttings or layers. Plants obtained by sowing seed in April or May ought now to be of good size, or large enough for finally putting out in beds. The latter should be about 6 feet wide, raised a few inches above the level, and well drained. If the soil is of a medium loamy character, and the position somewhat sheltered, so much the better, though seedling Carnations as a rule are not very fastidious, and will often thrive in mixed borders, and other but slightly prepared positions. They should be carefully transplanted from the boxes or pans in which they were first pricked out, with the aid of a trowel, and be put out about 12 inches apart each way. Water in dry weather, and in showery weather look out for slugs.

THE BEE-KEEPER.

QUEEN SUBSTITUTION.

We often see advice given to the effect that after queens have attained a certain age they should be removed and a successor given to the stock so deprived of its head. To some extent this is good and sound teaching ; but as a correspondent in a contemporary points out, it is not after all the age of the queen at which we should look, but her fitness to remain at the head of the stock. Some queens are most valuable at an age when others are practically useless ; others are at an early age only retained at a loss to the bee-keeper. True, many bee-keepers do not know sufficient of what is going on in the interior of their stocks to judge as to the fitness of a queen, and the advice to remove queens which have passed their third year is consequently in their case the most likely to be of practical value and generally useful, because the percentage of queens retaining their full vigour after three years' work in a large hive is, although larger than many have any idea of, still relatively small to the number which at that age are worn out. The age of every queen in the apiary should be known and a record kept of all changes. Any bee-keeper can do this, and if from his record he finds a queen past her third year—going into her fourth—a new one should be substituted, always supposing that the bee-keeper has no knowledge of the fitness of the queen apart from her age. Young queens, strong stocks, and a large surplus follow one another. The young queen enables the bees to rear brood in large quantities, and the increasing number of hatching bees enables the stock to still further increase in numbers at a rapid rate, with the result that when the honey season approaches a vast multitude of insects are ready to gather in the honey, while stocks headed by old worn-out queens are barely able to gain sustenance and to live on at all.

Added to these facts is the difficulty—often arising in February and the succeeding months—by reason of a queen giving out when it is almost impossible to give a successor. Even if an old queen does manage to tide over until the end of April the danger of the colony raising a new queen, and consequently sending forth a swarm, is increased tenfold from the fact that single queens are rarely raised, but there are generally several ; and then when they mature, if the stock is strong, the first hatched queen leads out a swarm, or the old worn-out queen leads out the swarm, and one of the newly matured princesses remains at the head of the stock. In any case a great deal of extra and unnecessary trouble is occasioned by the neglect of ordinary precautions in the past ; a little labour in due time saves much care and anxiety in the future.

Now comes the question whether it is better to rear queens or to purchase them, and it seems tolerably certain that there is no better method when such a course is practicable than for two or three bee-keepers to club together and raise the queens which they will require ; the expense and trouble is thereby divided and less honey is sacrificed. Good queens are as essential to profit as a good season. There cannot be bees without a queen, nor can there be a surplus without good weather in which to collect it. Some bee-keepers carry on the system of stimulative feeding in the autumn to a dangerous extent. The queen is forced to extend her period of labour, and is thus weakened and becomes old before her time. Young bees are undoubtedly necessary to successful wintering, but they are sometimes obtained in a haphazard manner, which considerably militates against the success of the stock in the future.

At the end of the honey season, and especially in a season like the present one, breeding should be encouraged, but no food should be administered later than the last week in September in any circumstances other than when it is advisable to risk a lesser evil in order to avoid a greater. There is no excuse for the procrastination so often seen in putting up and preparing colonies for winter, and not an inconsiderable amount of the failure which bee-keepers attribute to various causes is in reality the direct effect and the certain result of this policy of waiting pursued in the autumn. If feeding must be done it is just as easy to do it—in nine cases out of ten—at the proper time ; but we cannot altogether forget that when the season has come to a close, especially in a year like the present one, the bee-keeper's enthusiasm is somewhat damped, and he becomes rather listless until the spring.

We are pleased to see that "A Hallamshire Bee-keeper" is going to revolutionise bee-keeping by the children of his fertile brain. We hardly see the point of some of his observations, although we seem to detect an attempt at irony. Surely a gentleman of "A Hallamshire Bee-keeper's" experience must be able to protect his inventions if they are new and worth the trouble and expense ; and even if it is of no practical value to the bee-keeper of the future as to whether he was the gentleman who revolutionised bee-keeping or not, he will at least have the satisfaction of knowing that his genius has done something for which bee-keepers may have reason to be thankful, and for which every honest bee-keeper will be pleased to accord to him a meed of praise, even though the fact that "A Hallamshire Bee-keeper" is the inventor, and not some nobody, does not assist a bee-keeper in increasing the surplus which he will hope to obtain even more surely when these astounding inventions are thrown into the market. In the words of Milton, if we may slightly change them, we may expect that the result will be in future spoken of as a time when

> "Earth trembled as if again in pangs,
> And Nature gave a second groan."

—Felix.

THE CALEDONIAN APIARIAN SOCIETY'S SHOW.

The above Society, in conjunction with the Highland and Agricultural Society, held its annual Show on Tuesday the 24th, Wednesday the 25th, Thursday the 26th, and Friday the 27th July, on Glasgow Green. The weather was inauspicious, and the Show lacked the interest it formerly had. There was little honey and few competitors. There are reasons for the latter, and the unfavourable weather we have had answers for the former.

Very little of the present year's honey was shown, being mostly of last year's production, and had a better appearance than the new, which, according to the rules, was what only should have been shown. There was a class for granulated honey, the first prize being awarded to a mixed sample, some seemingly fine, but other jars very liquid and watery-looking, the second prize being awarded to a superior and uniform sample which, according to the schedule and our opinion, should have been placed first. The wine made from honey was, to our taste, too syrupy, and the beer too flat.

The comestibles made from honey were meritorious, but we think it is a mistake to make things from honey that does not improve the article as when made with sugar. If honey is employed in the manufacturing of anything it ought to be only when an improvement is apparent. Sugar is much cheaper than honey, and it is a want of economy to use it where sugar is cheaper and as good. Many things can be improved by honey and rendered more palatable than with sugar.

Observatory hives were well represented, but we think it a mistake to encourage others than the Unicomb, the only hive that scientific observations can be made from. Mr. Wm. McNally of Glenluce showed two hives of a novel description, which were neat and ingeniously made. One admitted the bees from comb to comb through openings in the sides of the hive covered with leather, which gave the bees access from one comb to another and did not kill them. The other hive was made on the principle of the "Lanarkshire" hive, but an omission in its construction to keep the combs together when one was hoisted was a grave defect, as when it was up and honey coming in the space would be filled with comb, and so render it an impossibility to lower it. With this exception, however, which will probably be remedied, the hive was much admired, and as the combs and brood were naturally and well covered with bees it was deservedly awarded the first prize.

Only two collections of appliances were shown by Messrs. McNally and Young of Perth, the famed makers of extractors and other tin appliances. Both collections were good, large and varied, Mr. Wm. McNally gaining first honours.

There was nothing novel and little to attract visitors inside, the greatest attraction being the bee tent, where driving was performed by Mr. Johnston of Touch, and lecturing by the Rev. J. B. Robertson of Stranraer went on simultaneously, which new feature added to the interest of the performance. But why keep on demonstrating the driving of bees—an obsolete thing in bee-keeping? And why preach the docility of bees with an awning of netting between the bees and visitors? If bee shows are to do good we should show how to manipulate bees under the modern system and with modern appliances, and without screens of any kind. Then will novices place confidence in both

teachers and bees; and while the most docile bees are taken as a type the public might be informed that there are some varieties not easily quieted, and when roused would not only put to rout the onlookers but a whole army. The whole truth and nothing but the truth should be told. It is misleading to say that courage and gentle handling are all that are necessary to handle bees with impunity. We hope that if this Society is to continue the prizes may be mostly distributed amongst the classes that require assistance, and who by the aid of bees may improve their condition by an increase of income, and that committees will encourage the uses of honey as hinted in the foregoing is the wish of all who view the matter aright.—L. B. K.

TRADE CATALOGUES RECEIVED.

John R. Box, Croydon.—*Catalogue of Bulbs and Plants.*
Lucombe, Pince & Co., Exeter.—*Catalogue of Bulbs and Roses.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*W. J. S.*).—The address published in the work alluded to is correct, and the letter you have sent is posted accordingly.

National Rose Catalogue (*Rosarian*).—We are not quite certain on the point, but you can obtain the information by writing to Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, Kent, enclosing a stamped directed envelope for a reply.

Ham Green Favourite Tomato (*J. L. D.*).—This variety was raised by Mr. E. F. Crocker, The Gardens, Ham Green, Bristol, and is quite one of the best now ripening at Chiswick. It is a strong grower and free bearer of good sized and well shaped fruit.

Old Tan (*J. T. S.*).—We have received the sample. Such refuse would only be useful for improving mechanically very heavy soil, and as you have land of that nature we should give it a heavy dressing. It might render very heavy soil more suitable for Liliums.

Vines for a Greenhouse (*R. S.*).—You had better confine yourself to four Vines in your 16-feet greenhouse, and for your purpose the Black Hamburgh will be the best. We think that from such a small house the profits from sale of the fruit would be very limited.

Aubrietias (*J. A.*).—Seedling plants may be planted any time during the summer, or slips of older plants may be put in during showery weather; but it is better to put them into some shady place to strike and then plant them out. Old plants, however, yield rooted layers or offsets, which do very well.

Young Laurel Leaves (*A. S.*).—The brown patches are occasioned, probably, by violent transitions of temperature. A sweet exudation is often found on the young stalks of Laurel leaves growing vigorously, and we have no doubt that the bees obtain honey from it.

Lucerne (*B. E.*).—This must be sown early in April upon well cleaned ground. Sow in drills a foot apart to allow the hoe keeping it clean. We should sow the whole 30 rods with Lucerne. Keep it well supplied with liquid manure, and you may cut it four or five times annually. A dressing with chalk or lime rubbish will be advantageous.

Asparagus Failing (*A. O. S.*).—We have not heard of a general failure of the crop this year. We recommend you to continue abstaining from cutting, and to give abundance of house sewage or other strong liquid manure twice a week throughout the growing season. If no shoots are produced, then, of course, the plants are dead, and you must plant afresh next spring.

Photographs (*A. McDonald*).—We received the photographs of Calceolarias, but if a letter was sent with them it must have slipped away unseen when the parcel was opened, and the only one received by post is dated July 28th. The plants were evidently fine, and must have been well cultivated, though they are not quite clearly represented.

Vine Leaves Falling (*H. B.*).—You supply no data whatever, either as to the nature of the soil or the treatment as regards temperature and ventilation to which the Vines have been subjected, to enable us to form a definite opinion on the subject. Their appearance suggests they have either been kept too close, or the border is too light, rich, and deficient in calcareous matter. The buds must suffer to some extent by the loss of the leaves. The leafstalks are too long, soft, and thin to be satisfactory.

Pelargoniums Dying (*Crux D.*).—The old plant sent is cankered at the base, a not unusual occurrence, and the origin not easy to trace. The wounds often heal over, and as your plant "grew all right" after you received it we suspect there has been some error in watering, or the position was unsuitable. If the cutting was healthy when inserted its decay after rooting is the result of some mistake in management. As you do not indicate where the plants have been kept, or the treatment they have received, we are unable to give a more precise reply.

Clematises for Beds (*J. E.*).—We have seen many varieties tried and many failures. When planted in mixture irregularity of growth results in patchiness, and eventually the weaker sorts are overrun by the stronger. For producing bold masses of colour the old and effective C. Jackmanni is, we suspect, still unsurpassed, the growths being trained on wires fixed across the beds. Spring is a good time for planting, disposing the plants about 2 feet asunder. The temperatures given in the "Gardeners' Dictionary" as suitable for different plants are for day and night respectively by artificial heat, 5° or 10° increase by sun heat being allowable.

Mulberries Failing Young (*H. D.*).—As the tree produced a few fruits some years ago, we see no reason why it should not do so again. Most likely it is extra luxuriant from the roots getting down into the clay. Root-pruning would do it good, more especially as it has actually fruited. Female and male flowers are produced separately, just as in the case of the Cucumber. The former in small, ovate, erect spikes; the latter in a drooping axillary spike. Generally both flowers are produced on the same tree, but sometimes the flowers are nearly all males, and, in other cases, nearly all females. The check by root-pruning will encourage the pistil or fruit-producing flowers, more especially as they have previously appeared and arrived at maturity.

Trimming Ivy—Hydrangeas (*W. S. S.*).—The best time to "trim Ivy on the walls of a dwelling-house to look green again as early as possible," is towards the close of April, cutting it close with shears, and removing any accumulations of the old foliage with the hand. Fresh growths will shortly appear and be in good foliage in the course of a few weeks. Hydrangeas require only to have the shoots that have flowered cut back to where the buds are prominent in the axils of the leaves, and any weakly or elongated growths may be cut out or shortened, but only to plump buds, otherwise next year's flowering will be interfered with. In most cases it is only necessary to remove the decayed flower shoots. The plants must have sufficient water, and should be given a light and airy situation, so as to perfect the buds and wood.

Barrington Peach (*E. F. C.*).—The fruit and leaves sent resemble those of the Barrington, but your description of the flowers differs somewhat from those of that variety. We append the description of Barrington, and you can then perhaps determine the point for yourself:—Fruit large, roundish ovate, some of them terminated by a nipple at the apex. Skin downy, yellowish green, marbled with red next the sun. Suture well defined. Flesh yellowish, slightly tinged with red at the stone, rich, vinous, and of first-rate quality. Flowers large. Leaves with round glands. Ripens in the middle of September. The tree is very hardy, vigorous, and a good bearer. This is one of the best midseason Peaches, and bears carriage well. It was raised by a Mr. Barrington of Burwood, in Surrey, early in the present century. We do not find it mentioned in any nursery catalogue prior to 1826.

Eucomis punctata (*G. J.*).—It has large handsome spreading leaves, with their stalks much spotted and tinged with purple. It requires the same treatment, soil, and everything all the year round as Fuchsias. Gardeners grow Fuchsias in pots better than they would grow in the open border. But in an ordinary way Fuchsias do better planted out in a good border than in pots, and it is just the same with the Eucomis. Therefore, under your circumstances, the best thing you can do is to select a snug warm place for it out in the open air near to a south wall, or on a west aspect under a wall. To plant it there at once, as deep as it is now in the pots, or if not in a pot, to see the top of the bundle of roots is 3 inches below the surface. Give it water as often for the first month as if it were in a pot; after that it will do for itself, and the same sized heap of coal ashes which would save the roots of a cut-down Fuchsia from the frost will do to save the roots of Eucomis, but the leaves will go just like the tops of Fuchsias. Eucomis is a beautiful old-fashioned plant, and worth all the attention required.

Thinning Fruit Tree Shoots (*F. J.*).—The wet weather has induced growth quite abnormally. To prune hard under such circumstances is only to aggravate the evil, as it will have a tendency to induce late growth, which should be carefully guarded against by leaving the shoots a little longer than usual, and allowing some lateral growth to attract the sap, keeping it from starting the spur and other buds. To thin the spurs now is not judicious, but the shoots where crowded should be thinned to admit light and air for the storing of assimilated matter in the parts that are to remain permanently. It is too early to interfere with the roots of fruit trees generally, but any that are growing too vigorously and do not perfect fruit buds may have a

trench taken out around them deep enough to sever all roots, filling up the trench again firmly. About one-third the distance from the stem the trees spread is proper for the trench. It will probably cause the trees to form fruit buds. Allow one Strawberry layer to a plant, all others should be pinched off as they appear.

Club-root in Cabbages (*Amateur*).—It is in some cases very difficult to deal with. The best preventive is to dress the ground with gas-lime at the rate of a bushel per rod (30¼ square yards) some months in advance of putting in the crop, for when applied at the time or shortly in advance of the planting it is injurious to them. It should be spread evenly on the surface, and be merely raked or very lightly pointed in. A dressing of nitrate of soda is also good. It may be applied a fortnight in advance of the crop, at the rate of 1 lb. per rod. Superphosphate of lime may be used advantageously at the rate of 3 to 4½ lbs. per rod. When planting out, any Cabbages found with a protuberance at the root should be thrown away, or the club opened and the grub destroyed; those and all the other plants dipped in a thick solution of soot water. Perhaps the best material for dipping is to mix 1 oz. Calvert's No 5 carbolic acid with two gallons of soapsuds, adding sufficient clay or loam to form a thin paste. Well stir the mixture and dip the whole of the plants before planting, which must be in damp soil, so as to render watering unnecessary. Petroleum may be used in a similar manner as the carbolic acid.

Bee Orchis Treatment (*J. R.*).—The Ophrys apifera may be grown in pots, which should be well drained, using pieces of chalk, and a compost of sandy loam, but not very light, intermixed with about a fourth of chalk in moderate sized pieces. The tuberous roots should be placed beside or between pieces of chalk, care being taken to fill in the interstices with the loam. The plants may be stood on ashes in a cold frame, but are preferably plunged in that material to the rim. They require to have the soil always moist, but little water will be needed during the resting period, whilst, when growing and until the growth matures, water must be afforded copiously. They are the better for slight shade. Admit air on all favourable occasions, and draw the lights off whenever the weather is mild. They may also be grown in pots plunged in ashes with a little protective material in winter, such as dry hay. A position where they will have plenty of light with slight shade from hot sun is the best for these plants. The best mode of culture is to plant at the foot of rockwork alongside limestone or chalk, with rock or other prominence that will afford shade from the powerful rays of summer sun. Care should be taken not to allow them to suffer from lack of moisture.

Ammonia for Vines (*R. S. T.*).—Time after time it has been stated in "Work for the Week," in articles, and in answers in this column, that ammonia can be beneficially applied to Vines in the form of strong guano water sprinkled in the house and placed in troughs on the pipes. We are most willing to advise you at all times, but have often observed you apply for information that has been given a few weeks before, and consequently a few weeks too late for your deriving full benefit from the replies that we can give on a subject. Mix one or two ounces of guano in a gallon of water, and make every available plant of the house wet with it every evening when you close the sashes. You cannot very well use too much of this in hot weather until the Grapes colour, but open the lights an inch or two at the top before nightfall, and the front lights also on sultry nights, and leave them open, giving more air very early in the morning in advance of the rising temperature—that is to prevent the heat rushing up suddenly, then having to throw open the ventilators to reduce it. This latter practice, which is much too common, is the cause of many failures. The night temperature you name is quite 5° higher than is recommended in the Journal; in fact 10°, and we fear you do not read attentively. If the thermometer registers 65° the first thing in the morning the house will be quite warm enough, but there must always be a free circulation of air. Shallow vessels may still be kept filled with water in hot weather, but the ammonia applications had better cease when the Grapes are fairly colouring, and before they are ripe. As has frequently been stated, this should commence when the berries are about stoning.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. S.*).—The box did not reach us till Monday, and as it was only half filled with fruit the contents resembled jam, hence the varieties were totally beyond identification.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*P. D.*).—As you will see by our standing notification we do not undertake to name varieties of florists' flowers. Possibly most of those you send never had names; the flaked and mottled flowers are inferior. If you purchased the plants as named varieties you had better send flowers to the vendor for him to name. (*J. R. S. C.*).—Melilotus officinalis. (*W. K.*).—1, Lotus corniculatus; 2, Medicago maculata; 3, Trifolium pratense. (*W. B. R.*).—1, Silene Armeria; 2, Centranthus ruber. (*G. G.*).—We do not undertake to name Roses, and the other two specimens, both apparently Spiræas, were not in good condition for determination.

COVENT GARDEN MARKET.—AUGUST 1ST.

A brisk business doing, with heavy supplies. Prices remain the same with the exception of house fruit, which is lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	10 0	to 15 0
Cherries, ½ sieve	2 0	6 0	Oranges, per 100	4 0	9 0
Cobs, 100 lbs.	0 0	0 0	Peaches, dozen	2 0	10 0
Currants (Red), ½ sieve	2 0	3 0	Pears, dozen	0 0	0 0
,, (Black), ½ sieve	3 0	3 6	St. Michael Pines, each	3 0	5 0
Grapes, per lb.	1 6	3 0	Strawberries, per lb.	0 6	1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 6	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	8 0	14 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	3 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 4	0 7	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 6	0 10
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s d.		s. d.	s. d.
Abutilons, 12 bunches	2 0	to 4 0	Margnerites, 12 bnnches	2 0	to 6 0
Arnm Lilies, 12 blooms	2 0	3 0	Mignonette, 12 bnnches	2 0	3 0
Asters, French, per bunch	1 3	1 6	Pansies, 12 bchs	1 0	3 0
Azalea, 12 sprays	0 0	0 0	Pelargoniums, 12 trnsses	0 6	1 0
Bouvardias, bunch	0 6	1 0	,, scarlet, 12 trusses	0 4	0 6
Calceolaria, 12 bunches	4 0	6 0	Pinks, varions, 12 bnnches	2 0	6 0
Camellias, 12 blooms	0 0	0 0	Polyanthus, 12 bunches	0 0	0 0
Carnations, 12 blooms	1 0	3 0	Pyrethrum, doz. bunches	2 0	4 0
,, 12 bunches	4 0	6 0	Roses, Red, 12 blooms	0 9	1 6
Cornflower, 12 bunches	1 6	3 0	,, (ontdoor), 12 bchs	2 0	6 0
Daisies, 12 bunches	2 0	4 0	,, (indoor), dozen	0 6	1 0
Delphinium, 12 bunches	2 0	3 0	,, Tea, dozen	1 0	2 0
Epiphyllum, 12 blooms	0 0	0 0	,, yellow	2 0	4 0
Encharis, dozen	3 0	6 0	,, (Moss), 12 bunches	4 0	9 0
Gardenias, 12 blooms	1 6	4 0	Spiræa, bnnch	0 6	1 0
Iris, 12 bnnches	0 0	0 0	Stephanotis, 12 sprays	1 6	3 0
Lapageria, coloured, 12 blooms	1 0	1 6	Stocks, 12 bunches	4 0	6 0
Lilinm candidnm, per bunch	1 0	1 6	Sweet Peas, dozen	3 0	6 0
,, 12 blooms	0 6	0 9	Sweet Sultan, 12 bunches	2 0	6 0
Lilinm longiflorum, 12 blooms	2 0	4 0	Trojæolum, 12 bnnches	1 0	2 0
			Tuberoses, 12 blooms	0 6	1 0
			White Gladiolus, 12 sprays	0 6	1 6
			White Lilac, per bunch	0 0	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Genista, per dozen	0 0	to 0 0
Arbor vitæ (golden) dozen	12 0	24 0	Heliotrope, dozen pots	3 0	6 0
Calceolaria, per dozen	4 0	5 0	Ivy Geranium	3 0	6 0
Cineraria, dozen	0 0	0 0	Hydrangea, dozen	9 0	18 0
Coleus, dozen	2 0	4 0	Lilies Valley, dozen	0 0	0 0
Crassnia, dozen	9 0	18 0	Lilinm, various, doz. pots	12 0	21 0
Deutzia, per dozen	0 0	0 0	Lobelia, per dozen	3 0	6 0
Dracæna terminalis, doz.	30 0	60 0	Marguerite Daisy, dozen	6 0	12 0
,, viridis, dozen	12 0	24 0	Mignonette, per dozen	4 0	6 0
Erica, various, dozen	0 0	0 0	Musk, dozen pots	2 0	4 0
Euonymus, in var., dozen	6 0	18 0	Myrtles, dozen	6 0	12 0
Evergreens, in var., dozen	6 0	24 0	Nastnrtinms, per dozen	3 0	6 0
Ferns, in variety, dozen	4 0	18 0	Palms, in var., each	2 6	21 0
Ficus elastica, each	1 6	7 0	Pelargoniums, dozen	6 0	12 0
Foliage Plants, var., each	2 0	10 0	,, scarlet, doz.	3 0	6 0
Fnchsia, dozen pots	3 0	9 0	Spirea japonica, doz.	6 0	12 0



A WET SUMMER.

AFTER the dry weather of May a dripping June was gladly welcomed, as being admirably calculated to promote free growth and bring on the corn crops in readiness to derive full benefit from the hot summer weather which we had reasonable hope would follow in July. But such hopes were doomed to disappointment, for the cold wet weather of July, 1888, was so remarkable that it will certainly be remembered for many years to come; not, we hope, for any disastrous results arising from it, but rather for its phenomenal character alone.

True it is that people are not wanting who assert that the effects of week after week of cold, wet, sunless weather in July must prove the reverse of beneficial for the corn; that the Wheat could not "cast"—*i.e.*, set its blossom and develope grain—without

bright sunshine, and that such a summer must prove disastrous to corn crops. Well, now, we have several farms in hand in different parts of the great corn-growing district of East Anglia, and the superintendence of them, together with the management of widespread landed property, enables us to watch the progress of the crops and the effects of weather upon them, and we are bound to say that, so far, good rather than evil has followed a dripping July. The corn harvest must inevitably be late, but what does that matter if we get an abundant crop of corn and fine harvest weather? No doubt bright sunny weather is desirable when the corn is in bloom, but it is not indispensable to grain development. That depends much more upon atmospheric temperature than upon clear skies. As a matter of fact the mean temperature of the first week of July was rather more than a degree above that of the same time of year during the last fifty years, but the temperature of the second week was between 2° and 3° below it, and that of the third week was between 5° and 6° below the average. The fourth week shows a recovery of temperature, and an examination of the corn proves that the whole of it has "cast" very well indeed. Rye is almost ready for harvest; Barley is fine alike in ears and grain; Wheat is so forward that myriads of sparrows find plenty of food in the ears, and Oats show clearly that the process of ripening has already begun.

So far, then, the somewhat cold and showery weather has done no harm, except it be to the hay, but fine weather is necessary for the corn harvest, for sprouting grain is spoilt grain, and we heartily hope that a bright sunny August will send St. Swithin into retirement again. Peas and Beans have thriven wonderfully, nor do we find in these useful crops a mere abnormal straw growth, for pods are plentiful enough, and it must not be forgotten how invaluable Pea and Bean straw is for feeding sheep and cattle. We have now fair promise of an ample store of this valuable fodder, which dear-bought experience has taught us will prove invaluable next winter, and there is nothing more nourishing than Pea and Bean meal for live stock. Far better is it to have a good store of home-grown food for that purpose than to waste money upon impure oilcake.

The showery weather has undoubtedly made haymaking an expensive process, but the fact remains that good full flavoured hay can be made even in showery weather, and the bulk of the grass crop has been practically doubled by the rain. The good old rule of mowing grass for hay just as it is in full bloom has met with very little attention this year, but the thick growth of late grasses and Clover more than atones for some overripeness in the early grass, and the aftermath affords an exceptionally abundant growth of succulent grass. It is perhaps in the aftermath that the value of Cocksfoot in permanent pasture is best realised, for it starts into growth before any other grass, giving a strong free growth, of which both sheep and cows are especially fond. In this respect it is superior to all other grasses, and it answers as well for hay as any; better than most, we might assert, if bulk alone is considered.

Root crops of course thrive apace in such showery weather, yet even of such crops we have heard it said that they are now making leaves at the expense of roots! Yet we never heard even the most pronounced grumbler assert that large roots had not fine leaves. Cabbages and Kale ought to be abundant enough next winter if only the land has been well cultivated. We have ample evidence that it is the year of years for chemical manures, and the crops to which such manure has been applied show by an exceptionally vigorous growth that the busy roots have not suffered the nitrogen to be washed out of the soil.

WORK ON THE HOME FARM.

The corn harvest will be so late that there will be no stubble Turnips this year, nor shall we require them, for we were able to get fallow land so clean in May that it lay ready to our hand for sowing successional root crops in June and July. The last sowings of White Turnips have been made, and there will be plenty of lamb food from them next spring. Rye is almost ripe enough for mowing, and winter Oats will follow closely, for when the grain changes from the juicy or milky stage no time should be lost in mowing, or there will be risk of much of the corn falling. On small farms where space is so precious that close cropping has to be practised, Turnips have been sown after Tares, and have come well. Rye or Oat stubbles will be broken up early for winter Tares, which if sown early often give a very valuable supply of green food early in spring, to which we may turn after the Rye folding is done.

The showery weather has induced so strong a growth of young Clovers and mixed layers among corn that it is likely to prove troublesome in harvest. The only way to avoid trouble from it is to mow high and leave long stubbles; this involves some loss of straw, but it ensures the expeditious harvesting of the corn, a matter of especial importance with Barley, which suffers a serious deterioration in value from discoloration by rain. Some of the heavier Barley has become lodged by high wind and heavy rain, but we have not seen this to any great extent. On the whole, it is remarkable how well the corn stands up in the stormy weather we have had lately. This may in some measure be accounted for by the unusually robust growth of straw caused by the wet July. At one time the straw growth promised to be very dwarf, but straw and grain are now alike abundant.

Haymaking will now soon be finished. It has proved a tedious, expensive, and arduous undertaking, but as usual watchfulness and care have enabled us to make good hay without bright sunshine. Haycocks have enabled us to overcome weather difficulties; without them the hay would have been spoilt. Greatly do we regret to find so many farmers without poles, blocks, pulleys, ropes, and suitable rick cloths to protect the ricks from rain. Many who have rick cloths simply throw them over the rick at night, but that is most objectionable, as it neither throws off the rain well nor admits of a free escape of vapour from the rick.

OUR LETTER BOX.

Liver Fluke in Sheep (*M. S.*).—A wet spring and summer frequently causes both sheep and lambs to suffer from liver fluke. No disease to which sheep are liable is more difficult to overcome. Out of fifty lambs purchased at a July fair in a wet season we lost fifteen despite all our care. We have also had heavy losses of sheep by it. During the earlier stages of the disease the animals fatten quickly and the mutton is excellent. When sheep are attacked by it, the only way to avoid loss is to force them on by high feeding, so that they may be killed and sold while the meat is wholesome. Lameness of the right foreleg is the first unmistakeable symptom. If the sheep is then caught and pressed upon the right side it shrinks with pain. As the disease advances the eye becomes suffused with yellow; the skin also becomes yellow, the wool parts easily from it, and then death usually follows quickly. The remedy, or rather the best method of treatment, is to put the flock upon a dry upland pasture; to give dry food, consisting of chopped hay mixed with crushed oats, bran, and a little cake, with a plentiful mixture of salt. Rock salt is also kept constantly among the sheep. A tonic consisting of a drachm of powdered gentian root with half a drachm of powdered ginger may also be given frequently with advantage.

Books (*H. B. M., Canada*).—"The Complete Grazier and Farmers' (&c.) Assistant," by Youatt & Burn; Crosby, Lockwood & Co., 7, Stationers' Hall Court, Ludgate Hill, London. £1 1s. "Handbook of the Farm Series," nine vols. at 2s. 6d. each; Bradbury, Agnew & Co., 9, Bouverie Street, London. "Principles of Scientific Elementary Agriculture," by J. C. Buckmaster and J. J. Miller; Simpkin, Marshall and Co., London. 1s. 6d. "Wrighton's Handbook of Agriculture;" Collins, Sons & Co., London. 2s. This set will suffice to give an all-round idea of general agriculture. Thomas Jamieson, Esq., 173, Union Street, Dundee, is the address to which you may apply for the other pamphlets.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. July.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 22	29.883	65.4	59.4	S.W.	58.0	72.4	56.3	114.4	53.0	0.347
Monday..... 23	29.618	61.3	58.3	S.W.	58.6	69.0	56.6	113.4	54.6	—
Tuesday 24	29.732	62.8	58.7	S.W.	58.3	69.4	54.2	114.8	50.7	0.041
Wednesday.. 25	29.745	62.1	59.6	S.	58.3	64.9	56.6	102.4	54.0	0.229
Thursday.... 26	29.741	61.0	57.9	W.	58.2	70.1	53.8	114.8	51.2	0.134
Friday 27	29.874	61.8	57.9	S.	58.4	70.4	50.4	114.7	45.8	0.373
Saturday 28	29.446	62.9	60.3	N.W.	58.3	69.0	57.5	114.7	5.2	0.017
	29.723	62.5	58.9		58.3	69.3	55.1	111.3	53.2	1.141

REMARKS.

22nd.—Very fine fresh morning, and pleasant day, without much sunshine. Heavy rain from 10.30 to midnight, with lightning and thunder.

23rd.—Overcast and threatening, with distant thunder until about 11 A.M., then fine and generally sunny.

24th.—Gale all day, occasional rain squalls in the morning, otherwise generally bright.

25th.—Wet all day, fair evening.

26th.—A thorough specimen of an April day, bright sun and heavy showers alternating.

27th.—Bright till 10 A.M., showery till 11 A.M., then fair with occasional sun. Some rain in afternoon, and heavy rain from 6 to 7 P.M.

28th.—Generally fair, but slight rain about 7 P.M.

Temperature near the average, but owing to cloudiness the range has been small, the nights have been warmer and the days cooler than usual—in fact, the highest during the week was only 72.4°. Rain again much above the average.—G. J. SYMONS.

VIOLAS.

FLOWER garden plants that will endure the continuous rain of a season like the present possess a value which all can appreciate that have large beds and borders under their charge, and which are expected to have a gay appearance at this time of year. The conventional bedding plants of the Zonal Pelargonium, Calceolaria, Verbena, and Lobelia types, have had a bad time, the best arrangements and the best prepared plants having in the majority of cases failed to give anything like satisfaction. It is now becoming too late for them to do much good, and many gardeners have quietly resolved not to depend another season exclusively upon one class of plants for garden decoration. Even Tuberous Begonias, which seem to be the most independent of weather conditions, are much retarded this season, and are only just commencing to reveal their true character. A few weeks' bright sunny weather will, however, suit these admirably and furnish the borders with all the brilliant tints which the Pelargoniums have been struggling in vain to produce. Some of the hardy herbaceous plants have resisted the torrents satisfactorily, but all with delicate soft-tinted flowers have been sadly damaged, while in our Rose gardens we have had to snatch a flower here and there amidst a melancholy array of unexpanded or decaying buds.

Few plants can be compared with Violas and Pansies for rain-enduring constitution, and though we have had to lament the loss of scores of valued favourites amongst other plants, these have not only defied the weather, but have actually seemed to luxuriate in the abundant moisture. It is true growth has been a little drawn and weakly in some instances, but the numbers and prolonged succession of the flowers have more than compensated for this in such a summer of floral dearth. Respecting the value of Violas more particularly we have been strongly remiuded by the arrival of a varied collection of flowers from Mr. Wm. Dean of Solihull, most charmingly representing their astonishing range of colouring. Violas cannot be ranked amongst neglected plants in the same sense that many others can, but possessing such important qualities and so much variety, they ought unquestionably to be much more largely planted and more frequently seen in gardens. Why, for instance, as remarked by a correspondent, do we so seldom see them in the public parks or gardens? Occasionally a mixed bed in which Viola cornuta is employed attracts attention, but no attempt has been made to adequately represent the beauty of these plants. In beds of one variety, mixed, or as margins to other plants, for which they are especially adapted, they have a delightful effect.

It cannot be urged that any difficulty is experienced in securing distinct varieties, for there are now some scores of charming forms to select from, including the richest and the most delicate tints. Mr. Dean sends us about fifty varieties, of which the following may be mentioned as the best in the respective groups. Commencing with the purple selfs, or those in which rich velvety purple tints predominate, very notable is Sir Joseph Terry, a new variety that is not less remarkable for its depth of colour than for its compact habit and free flowering. Topsy also is good in colour and free, but being of more spreading habit is better for large beds. Two beautiful seedlings from the well known Clveden Purple are named respectively Queen of Violets and Queen of Purples, both more compact in habit and more profuse than the parent variety.

Amongst blue and lilac Violas True Blue is one of Mr. Dean's raising, and a first-rate bedding variety, the colour a bright blue purple, of fine compact habit, sturdy constitution and exceptionally profuse. Navy Blue is one of the Blue Bell type but superior in habit and colour, Archie Grant being a favourite rich dark blue, and Queen of Lilacs a capital variety for large beds, the flowers of great size, lilac, with rich blue veins and a gold eye. Lilac and lavender tinted Violas, such as Duchess of Sutherland, Fairy Queen, and Elegans, are generally seen to better advantage when the weather is not quite so trying, but all are good, and especially the last-named, which should be freely employed in bedding.

White-flowered Violas are not very numerous, and they are usually rather disappointing, many so-called pure varieties coming splashed with colour, or of a dull dirty creamy hue. In Countess of Hopetoun we have, however, one of the best yet raised, the flowers of good shape, free from all markings, compact, and profuse in flowering. In contrast with some dark purples or velvety blues this variety is excellent. Mrs. Smith is another of the same type, but with larger flowers and a few fine rays in the centre. Mrs. Gray surpasses the other two in strength of habit; its flowers also are admirable in shape and size, possessing an agreeable fragrance, but in some seasons the flowers come tinted or streaked with pale purple.

The yellow-flowered Violas afford some useful bedding varieties, a trio of deep yellow forms being Bullion, Golden Prince Imperial, and Lutea profusa; while of pale yellows Ardwell Gem, Golden Prince, Queen of Spring, and Golden Queen of Spring are equally good in all respects. The "striped and clouded" group is a large one, comprising some of the most handsome varieties in cultivation and the most telling in borders. Such, for instance, as the well known Countess of Kintore, purple and white; Rosebud, crimson and purple; the Mearns, deep crimson and purplish mauve; and Mrs. Baxter, rosy purple. Other beautiful varieties in the same group are Mrs. Henry Child, violet and blue, shaded light at the edges, a charming novelty; Mrs. Tosh, Mrs. Brodie, Pytho, Spotted Gem, purple and white, and Ethel Baxter, rosy purple with a lighter edge. The fancy Violas include several very peculiar and distinct varieties, Blue Cloud being a novelty of much promise, creamy white edged with deep blue; Goldfinder, yellow edged mauve, is peculiar, but not so beautiful as the preceding; Bronze Queen and Dawn of Day both deserving mention.

Seven new varieties just to hand from Messrs. Dobbie & Co., Rothesay, must also be noted here, as they are of exceptional merit, having been raised by Mr. Baxter of Daldowie. In all the flowers are of good size and shape, the colours particularly rich. Gipsy Queen, lilac streaked, delicate and distinct; Hugh Ainslie, an improvement on Duchess of Albany; Sunrise, the upper petals soft rose, the lower rich crimson streaked with purple, gold eye; Queen of Scots an improvement on Countess of Kintore, deep violet centre, fading to nearly white at the edge, gold eye; Lady Gertrude, of The Mearns style and considered better, lower petals rich purplish crimson, upper pale blush or rose; Lady Ashton, lower petals creamy white, upper deeply bordered with rosy purple; and Crown Jewel, deep maroon with a wire edge of creamy white, most effective, and extremely rich.

Mr. W. Dean's remarks on the culture of Violas may conclude this article, and are well worth consideration:—

"The Viola is easily propagated, either by cuttings during August, September, or October, and later, or by rooted offsets. Cuttings can be put in early on a shady border and kept damp in dry weather, no glass being necessary. In the southern, western, and more favoured districts Violas will stand well out of doors during the winter, but in cold wet districts and very exposed situations, and in the Black Country districts, it is best to keep young plants in cold frames, when they can be fully exposed to the weather, excepting in very severe weather or drenching rains. Use plenty of drainage, 6 inches to 8 inches of good soil, and the plants near the glass, and from 2 inches to 3 inches apart, so that

they can be lifted with balls of earth and planted out in favourable weather in March or early in April. Let them have plenty of air through the winter excepting in bitterly cold or hard weather.

"For planting out, prepare the soil in winter by the addition of well-decayed manure—cowdung if it can be had—and have the ground in readiness for planting in March or April. If autumn planting is adopted, and when it can be done I recommend it, prepare the ground as already indicated, and plant out in October or November, so that the plants may get a firm root-hold before winter set in, and mulch with leaf soil, decayed dry manure, or some other material, keeping a reserve stock to make good any failures through the winter. Both for Violas and Pansies a position where they can be screened from the intense heat of the mid-day sun up to three or four o'clock is most beneficial in preserving the blooms and the plants. Watering with a fine-rose pot night and morning, and even oftener, is beneficial; and by doing this freely this season I effectually kept down the brown aphis, a most destructive pest. Old shoots when they have ceased blooming should be cut away, and two or three times during the summer some good soil should be placed in and about the plants and long growths pegged down. If Violas and Pansies are kept growing in vigorous health, the brown aphis—a terrible enemy—is beaten, and the plants kept free from it; but the plants should be watched for this pest, a very small variety of the green fly, then apply tobacco water or some other well known solution."

We shall be glad to receive contributions from any correspondents on this subject.

VINES—AERIAL ROOTS.

It is a generally accepted opinion that the roots produced by the stems, rods, or canes of Vines are different from those in the border. The only real difference, however, is that one is formed on that part of the Vine which is above ground, and the other on the part within the soil. Both are emitted whenever the conditions are favourable to their production. The root, or descending axis, differs from a stem through its origination, it does not ramify or branch symmetrically, and is devoid of normal leaf buds. A portion of the matter transmitted to the stem and the foliage to be elaborated and assimilated must descend and be stored corresponding to that stored in the young wood or cane, so that the roots become more or less of a ligneous character, which is proportionate to the maturity of the stem. If the growth is soft, long-jointed, and distinguished by a large pith, the roots are correspondingly soft and bare of rootlets, being more liable to collapse under adverse circumstances, as is unripe wood, through vicissitudes of climate, than thoroughly solidified and matured.

As the value of wood for fruit production depends entirely on the food stored therein, so with roots. Their preservation or continuance through the resting period is dependent on the measure of their maturity and material stored therein. The object of the cultivator with recently planted Vines is to produce as much growth as possible, in order also to have an increase of roots. A large amount of growth may be produced with very little mature wood and less stored matter than in canes that have not made a quarter the growth. The latter, through being required for fruiting, are kept somewhat closely pinched, more of the aliment absorbed by the roots and elaborated by the foliage being assimilated and stored alike in the cane and the roots. The wood of the last is brown and hard, the buds are well developed and prominent as nuts, the roots from their ligneous nature are retained during the resting period, prepared to emit fibres abundantly when the buds are called into activity. The wood of those that are to be cut back to the bottom of the trellis or rafter is for the most part unripe, the roots are of a spongy nature, and the greater part collapse during the resting period; the consequence is the Vines have not the benefit of as many active feeders in the early stages of growth as those treated in the previous year, so as to insure sturdy thoroughly solidified growth, properly elaborated and assimilated sap, or perfectly developed buds on properly matured wood. To encourage growth, therefore, in order to form roots, is not good unless means are adopted to so expose the foliage to light as to insure a descending current of assimilated matter to the roots.

It is essential that Vines selected for planting have a sturdy habit, short-jointed thoroughly solidified and ripened wood. Such I am well aware are not preferred, but the best and most thoroughly perfected are retained for fruiting in pots. Why? Is it not because canes with thoroughly ripened wood have roots of a more ligneous nature, more food being stored in them than those that have longer jointed, less firm wood, with larger pith, with roots very much less numerous, more fleshy and watery, there being very little ripe wood? Thoroughly ripened wood and ligneous roots stored with material give Vines their value for starting at an unnatural season. The early growths are supported by the stored up sap in the stem, still further supplemented by that in the roots. The Vine with short-jointed, stout, thoroughly perfected wood and plump buds, has sufficient roots to meet all the demands made upon them by fruiting without having recourse to adventitious or aërial roots. The case is different where the canes are long jointed, thick, having a large pith, and only the semblance of ripened wood, very little stored material being available for the support of the growth and the development of the fruit. The roots are long with thick ramifications, and they do not transmit food in sufficient quantity for the support of the foliage and developing fruit, as the stored up matter in their case is soon exhausted. In pot Vines adventitious roots appear at the collar or above it on the wood of the previous year of cut-backs, and given surface dressings these will soon extend over the pots into the plunging material, proving themselves true roots. This, however, is hardly applicable to Vines generally, as aërial roots from Vine stems or rods cannot well be supplied with material from which they can draw supplies supplementary to those afforded by the border roots.

If aërial roots are false our present system of growing Grapes is false also. It may be a bold assertion, but I venture to state that there is not one Vine in a hundred that is on true roots if aërial roots are false, which is not the case. A Vine at planting may be everything desired—viz., have short-jointed, thoroughly solidified and ripened wood, with a mass of roots emanating from the collar or immediately beneath the soil, and yet be ruined by the practice of planting so as to bury a good part of the cane in the soil as well as the roots. The idea, no doubt, is to increase the amount of roots from the part of the cane buried, and these roots, adventitious and corresponding to aërial, strike down or mostly proceed from the under side of the cane buried, the soil not being firm, or it may have shrunk so as to leave a cavity or looseness of compost next the wall; in any case, these roots strike deep in to the border, laying the best possible foundation of unsatisfactory crops of Grapes, with a certainty of abundance of aërial roots. A properly planted sparse-rooted Vine in a properly formed border may furnish itself with roots from the collar, which, proceeding laterally, will extend through the border near the surface, cultural requirements being afforded for their keeping, so that they are better than those consigned to disaster through burying the original roots along with a portion of the cane at planting. Objection may be taken to this on the ground that Vines so planted sometimes prove satisfactory. I am well aware of the fact that such Vines do splendidly for a few years, whilst the border materials are open, admitting the free access of air and rain and water; but how many years elapse before the Grapes begin to shank and finish indifferently? Take a Vine with two rods, both trained alike to the roof and having the same advantages up to the first indication or appearance of aërial roots; bring one rod down so that it can be buried a few inches deep in suitable compost. It will at once solve the problem as to the character of the roots by the additional vigour the growth on the rod speedily assumes; the finer berries and better finish of the Grapes, with something to spare for its companion rod, which will follow the lead and partake of the other's prosperity. The rod should be layered somewhat in advance of the growth or before the buds break, as from the contact of the rod with the compost roots will sooner be emitted, but they will not be at all freely catering until the Vine is advanced in growth very nearly if not quite up to the flowering and setting period. This I have proved by layering canes into pots, lengths of 12 feet or more, with the pots as close as they could be. The buds started with those from spurs on the rod, but roots did not push freely from the part of cane in the pots until the shoots had shown and developed the bunches, being well advanced for flowering and even set before the shoots began to start away with a bound, a clear indication that the roots were in possession of the soil, and sending up the aliment provided by applications of liquid manure or water passing through mulchings of rich material. Each shoot or cane left alone soon attains sufficient length and strength for a fruiting cane of the first order for another season's forcing, and instead of impoverishing the Vine they are a source of invigoration as long as they remain, and for some time after detachment the good effects continue, though there is a diminution apparently of benefit from the time of the detaching of the pot canes from the Vine.

Now let us hie back to the consideration of the two descriptions of Vines—viz., the short-jointed stout wood well ripened, with

roots fibrous and abundant near the surface, stored above and below ground with thoroughly assimilated matter ; and the long-jointed, lank, coarse-jointed, and large-pithed, with roots somewhere, but not near the surface, full of watery unassimilated matter both above and below ; or that description of Vine which from poverty of resource in making wood and roots are strawy ; and how do they act in respect of aërial roots ? They act as regards the first well, and as regards the other badly. In the first there is abundance of stored sap in firm thoroughly matured parts, which are not liable to loss to nearly the same extent as the other under disadvantageous conditions ; the roots are more numerous and much more ligneous, consequently many more or the greater part of those annually formed survive, and consequently push roots sufficient for the supply of nutriment. There is little or no emission of aërial roots unless there be an advantage in growth through greater geniality than the roots enjoy, which is clearly an error or mistake of culture rather than resulting of anything particularly wrong with the Vines, and that is soon rectified by recourse to more suitable treatment. The presence or otherwise of aërial roots is resultant of inadequacy of aliment proportionate to the condition of growth. Restore the reciprocal action between the roots and head, and aërial roots will cease growing without any disadvantage to the growth other than a tendency to check it and insure its solidification. The other description of Vine will, if examined, have very few and thick soft roots, fibres absent or much damaged, being made late and soft, as are the growths, and they collapse during the winter, shrunk if dry, or decayed if wet. Nothing is ripe to insure their preservation ; they suffer more loss by annual decay of the roots than those that are firm and ripened. The Vines start badly, the rods must be kept dripping with moisture and the atmosphere like a stew pan to induce the buds to move, with the result that tissue-paper-like foliage is formed, becoming flaccid under sun, and the bunches twist and curl. The Vines push aërial roots from the stems, rods, and spur stems—every part in fact where there is or has been a deposit of the assimilated matter—and these afford a temporary relief to the Vines by taking from the atmosphere the elements they are insufficiently supplied with by the roots. These roots remain until there is enough formed in the soil to meet the requirements of the growths, when they begin to wither and ultimately shrivel alike from the better supply of matter from the roots in the soil and the drier treatment accorded the Vines, which it is needless to point out, is not favourable to the extension and continuance of the aërial roots.

It must not be overlooked that Vines outdoors do not emit aërial roots nearly so frequently as those under glass, but it is not a question of degree, but of why they emit aërial roots at all. If it be moisture with geniality of climate favouring more growth than the roots proper can adequately support, my argument falls to the ground, and we have only to maintain a drier atmosphere to prevent air roots appearing, we having instead thoroughly solidified growth from the commencement, continued all through until we have wood and buds perfected and stored down to the root tips. With Vines in that happy state aërial roots need not cause anxiety to the cultivator, as with rational treatment they will keep on their even way for nobody knows how long. Whenever aërial roots appear from almost every part of the stem, and particularly where the spurs diverge from the rods at the base of canes on the ripened, or wood of the previous year, then be sure that the time has come when the roots in the border are not equal to the supply of nutriment the Vines require. No time should then be lost in preparing materials, such as clean drainage and suitable compost for forming a fresh border, in which to lay the roots nearer the surface when the growth is sufficiently matured for its performance. If the Vines have nothing but bare thick roots with a few small ones at the collar, it may be a question as to whether it would not be better to make a fresh start, planting Vines that are well furnished with roots, letting the after treatment be such as will preserve them, and then there will be no occasion to interfere with them other than to afford food supplies, or crude material for its manufacture.—G. Abbey.

NOTES ON CACTUSES.

Some thirty years ago I was garden boy in a fine old garden under a fine old Yorkshire gardener. He was a stern master and was called one of the old school. I have always considered him to be the best gardener under whom I ever served, as in spite of his natural sternness he was more communicative than the majority of head gardeners were in those days. Might I say a word in the behalf of the young men of the present day ? That the majority of "head" gardeners are anxious as to the future welfare of the learners under them admits of little doubt ; still, if we are to believe all we hear and see, there are cases to the contrary. That kind words of encouragement are not always thrown away requires no proving. They tend to give confidence and to engender an interest in the work to be done. I will not digress further, but will revert to the heading of my paper.

I was at the date named employed in weeding garden and pleasure ground walks, except on wet days, when I had to go into the houses, and nearly always had the same task set me—namely, cleaning Cactus plants. When the old gardener gave me orders what I was to do he always ended with the strict injunction, "Mind don't knock t'prieks off." Having the same task repeatedly, I had a fancy that the regular workers in the houses had an objection to these peculiar plants, it may have been on account of the spines. At all events I became familiar with the plants, and when one day I was told by my old master that I was the best hand at cleaning Cactus that he ever had I was more than ever interested in them. Not long after I was promoted to the charge of some houses ; they became my favourite plants, and I may add they have remained so to this day, and at the present time, although I have under my charge a goodly number of plants in considerable variety, including Orchids, which seem to be the fashionable, and I fully recognise their usefulness and beauty, yet my love for the striking, twisting, and stunted masses of vegetable matter of the Cactus family remains predominant. That this is a neglected class of plants cannot be denied, for although I have under my charge a collection that can be counted by the hundred, yet hundreds of gardens may be visited, and members of the Cactus family not be seen, excepting perhaps Epiphyllums, and they deservedly have held their own in most gardens.

It would be somewhat difficult, for me, at least, to state a reason why the plants under notice are so seldom seen. It cannot be on account of the difficulties in their culture, because none exists, whilst their gorgeous flowers rival in beauty and variety of colour the majority of flowering plants. Certainly they are not so chastely beautiful as the majority of Orchids, neither are they so costly. One objection that I have heard levelled against Cactuses is that the flowers are short-lived. Certainly they do not last so long as those of many other plants, still a continuity of blooms may be had over a long period. Some of the plants under my charge commenced flowering in April, and we have not had a break of a single day up to date ; and although the blooms naturally become less numerous as the season advances, we hope to have occasional blooms well into August, which means Cactus flowers for about five months. Some of them are deliciously scented, and many colours and forms are represented, from the tiny Mamillarias in thumb pots to the magnificent Cereus in large tubs.

The Night-flowering Cactus, Cereus grandiflorus, is one of the most popular of the whole genus, and should be grown in every garden, for although it is generally supposed to require a stove temperature, it will nevertheless succeed fairly well in a minimum temperature of 38°. This species is mostly to be found growing up a wall on which moss is fixed by some contrivance, so that as the stems ramble over the surface the roots from them take possession of the moss, which, when the plant is growing freely, should be kept moist by syringing. In such a position it flourishes admirably, but we prefer to grow this Cereus in a smaller compass, so that when the flowers appear we can move the plants about at pleasure, and instead of the ladies having to leave the drawing-room at night to see the flowers, we can carry the plants to the room to see the ladies. Plants grown on this, what I shall call restricted system, are therefore much appreciated. Six to ten-inch pots are used, and plants in such pots will, under attentive cultivation, carry from one to four blooms respectively. Three or four sticks are placed in each pot, and as the growths extend they are trained round them. Another plan I have found to answer well is to have galvanised iron stakes and ordinary small-meshed galvanised wire netting put round them, forming a sort of cylinder, which is filled with moss into which the plants root freely.

The compost used for this plant is sandy loam made very porous by adding a sufficient quantity of pounded bricks and pieces of charcoal, and when the plants become well established and in full growth liquid manure is applied in a diluted form two or three times. No manure is mixed with the soil, as from experience I am satisfied that the plants succeed better without it. The judicious use of water is absolutely necessary to ensure success. When in full and active growth give water freely, and place the plants in a somewhat shady position. When growth is completed place them in the full sun, and give water less often. When the stems assume a reddish hue it is a sure sign that they are ripened, and little or no water should be given until the spring, when signs of growth are again apparent. It should then be given with much caution, only sufficient to prevent shrivelling, or flower buds will not appear. As soon as these buds are safely formed more water may be given, but always with thoughtful care, especially if the plants are in a low temperature, cold and damp being fatal to the roots. To propagate young stock after taking off the shoots lay them on a shelf in the

full sun, so that the cut part may get dried or healed. They should then be laid (not inserted) on some damp moss or cocoa-nut fibre refuse, when roots will be emitted in a short time. They can then be potted in the ordinary compost as advised above. The spring is the best time to propagate, just as the plants show signs of starting into growth.

Cereus McDonaldiæ is another night flowerer, and although not so popular as C. grandiflorus, it is according to my fancy the most magnificent of all. The blooms are larger, often being 14 inches in diameter, but they lack the delicious fragrance of C. grandiflorus. Plants can easily be grown and flowered on the portable or restricted system. C. rostratus and C. triangularis are both of a rambling disposition, and produce handsome flowers, the latter species being an object of special interest when seen bearing its large-sized highly coloured fruit, which show to the best when trained in some way overhead. Both those decline to flower on the restricted system. Cereus speciosissimus produces the most brilliant coloured flowers imaginable, is of easy growth, and very free. It is probably better known than any other member of the family, with perhaps the exception of C. flagelliformis, called by cottagers the Rat's-tail Cactus, and good plants may sometimes be seen in their windows. C. Mallisoni is also well worthy of general cultivation, producing its bright rosy crimson flowers freely when in a small state, or it may be trained up the rafters when its flowers may be seen to the best advantage.—W. C.

(To be continued.)

CROPS THAT PAY.

Tomatoes raised from seed sown towards the end of April and brought forward under glass, however rude the structure, will grow strongly and sturdily from the first. This is the condition in which plants should be if the object the cultivator has in view is to be attained—namely, a good crop of fruit. When plants are drawn weakly in a close atmosphere they are too soft, and considerable time is lost before they attain the solidity necessary to insure a good set. But when raised under cool conditions, and advanced without further artificial aid than cold frames afford until the weather is sufficiently genial in June to turn them outside, they generally give every satisfaction. So far the season has been unfavourable, and too cold for the well-being of Tomatoes. A week or two ago, what with wind and cold, the plants presented a wretched condition, but they are again growing vigorously. The growths are strong, but too soft to insure a good set from the base. However, if fine weather sets in, reasonable success may be looked for, and if the plants will set their fruit the object we have in view will be attained. It is immaterial how small the fruit is when the plants are housed in September, provided they are not left out until they have been checked by cold.

The easiest mode of raising Tomatoes for this purpose is to prick them out in frames in 3 or 4 inches of moderately light soil on a firm base, so that they can be lifted with good roots, transferred to 6-inch pots, and from these to 10-inch, or direct into the latter size. The latter is the most economical system, and this can be done in June when the plants are turned outside. In a few days, or a week at the most, they become established, when they should be stood in some position where they can be fully exposed to the sun. If they can be placed in the position they are to occupy all the better. In the southern parts of the country they will be do very well in the open, but in the more northern districts shelter must be provided; the south side of a hedge will do very well if no better shelter can be given them. They can occupy ground from which an early crop has been taken. The pots should be plunged, placing them as thickly as they will stand in the row, and about 2½ feet between the rows, so that they can be easily trimmed whenever they need it. Each plant will require a stout stake 3 feet high. Strong cords can be run along the rows, with stakes at certain intervals to support them. This is the quickest and easiest method at first, but when the plants have to be lifted inside it is the work of two instead of one. Staking each plant at first is the best, all things considered. The pots can either be plunged, or the surface can be well mulched with manure to prevent evaporation and thus save labour in watering. All the attention needed is to water them occasionally if very dry weather follows, but if the pots are buried or liberally mulched they give but little trouble in this respect. Tie the shoots as they grow to the stakes, and remove all side growths. Confine the plants to one stem each, and the leaves must be reduced if they are becoming crowded. When the stems have attained a height of 2 feet 6 inches, or even 3 feet, they should be pinched, but this should be decided by the manner in which the fruits are setting at the base. If they are setting well no advantage is gained by allowing them to extend above the former height. The point of the plant should be taken out directly the desired height has been attained. It is a mistake to allow them to grow until a truss of flowers is produced at the height desired, and then cut away the portion above. If the plants are strong, as they should be, and the point is removed directly it can be taken out without injury to the truss of flowers, the plants will devote all their energies to the production of very strong trusses near the top, which are almost certain to set well if the weather is favourable.

When lifted indoors very little harm is done to Tomatoes by the destruction of a few roots that may have extended over the sides of the pots or out at the base. A little fresh manure can be placed on the surface, and if a little heat is employed in the structure, and it is kept moderately close for a few days, they will soon commence fresh root activity and perfect the whole of their fruit. Dwarf-growing varieties, after the style of Large Red, that commence fruiting freely near the base and produce a truss of flowers every second joint, are most suitable for this purpose. By growing late plants in pots and getting them set outside a supply of fruits can be had until the end of January.—Marketer.

A HOLIDAY EXCURSION.

The annual excursion of the Walkley Amateur Floral and Horticultural Society, which took place on Wednesday, July 18th, took the form, on this occasion, of a drive by road from Sheffield to the above-named fine Yorkshire residential estates, the parks of which are contiguous to each other, and an inspection, by permission previously obtained, of the beautiful and extensive gardens. Starting at 9 A.M. the first part of the journey—viz., from Sheffield to Rotherham, was performed through the busiest and blackest portion of what is frequently termed "Smoky Sheffield." Having passed through Rotherham (a quiet and sleepy sort of small market town, which in former years appears to have possessed much more importance and business energy than it now does), we emerged into the open country, our road lying along a typical English "country lane," the tall hedges and banks on either side being bright with wild flowers. The pretty village of Wickersley was also passed, where resides the Rev. F. Freeman, whose rectory garden is said to have been the first English home of the now popular summer flowering Chrysanthemum.

A halt was made at the village of Maltby, where the party partook of lunch. Advantage was taken of this by several of the party for a ramble through the village churchyard, which is charmingly kept, and is in all respects one of the most beautiful of its kind in the British Isles.

Proceeding thence along another country lane which leads through a finely wooded district and past Roche Abbey, we arrived at the entrance to Sandbeck Park, owned by the Earl of Scarborough. The Park is extensive and contains some fine timber. A walk of about half a mile across it brings us to the gardens, where, on arrival, we are soon met by the head gardener, Mr. Summers, who showed us through the numerous fruit and plant houses, and kitchen gardens. In the Peach houses we found that the fruit had for the most part been gathered, the little which was left, and the general good condition of the trees, testifying to the fact of its having been of high quality. In the vineries heavy crops of Grapes are maturing, the bunches and berries being medium sized. The shoulders were taken off at the time of thinning to induce uniformity in size and shape of bunches. Several large houses we found to be occupied by fruiting plants of Tomatoes, of which immense quantities are here grown. The varieties most favoured by him are Hackwood Park Prolific and Hathaway's Excelsior; several other varieties being grown, but are not found so free and productive. In a house devoted to Orchids we found a large collection of healthy vigorous pieces recently collected and sent home by his Lordship during his travels in their native homes, and consisting mostly of Cattleyas, Vandas, Lælias, Catasetums, &c., amongst them being several strong pieces of Lælia anceps alba.

A new range of Peach houses has recently been erected, in which, in addition to trees trained in the usual manner upon the back wall, others are trained to trellises arranged transversely across the house from the front to the pathway at the back, at about 4 feet apart, each such trellis being what may be termed a double one, composed of two sets of wires with a space of 3 to 4 inches between each set, two trees being planted to each such trellis, back to back. This is certainly economising space to the utmost. As to the ultimate gain in the weight of fruit produced, such has as yet to be proved, the trees being yet too young, but in every respect looking very satisfactory. The kitchen gardens were in excellent order and well cropped. Hardy fruits also were good and abundant. Numerous plants of Raspberry Baumforth's Seedling were bearing a splendid crop of very large fruit, and were much admired. Some very fine fruit were also being gathered of La Grosse Sucrée Strawberry. A large and heavy crop of Potato Mona's Pride was being dug. They were planted in rows a yard apart, with a row of Brussels Sprouts between each. The latter were larger and finer than any we have previously seen this season.

Leaving Sandbeck Gardens we soon arrived by a pleasant walk of about a mile at the entrance to the beautiful grounds of Firbeck Hall, the seat of the Rev. H. G. Jebb. There a short walk along the carriage drive (which is bordered by a broad belt of well-kept grass lawn and overhung by fine trees of Spanish Chestnut) brings us to the kitchen gardens, where at the entrance we were met by the experienced head

gardener, Mr. W. Egglestone. In every department of these beautiful gardens a high order of culture prevails. In the vegetable and fruit gardens fine crops of excellent quality were the rule, Strawberries (La Grosse Sucrée) were exceptionally fine; excellent crops of Peas William I. and Supreme were being gathered, the latter variety especially being in fine condition. Along the south side of this garden runs the vineries, consisting of three large and lofty lean-to succession houses. In the earliest house was a heavy crop of moderate sized bunches and berries, just finished ripening. And such finish! Indeed, we do not remember having seen a house of Black Hamburghs (of which variety these principally consisted) so densely and regularly covered throughout with a deep blue bloom as these were. I need hardly to state that the foliage was very fine; such finish would have been impossible had it been otherwise. In the late house was also a heavy crop of larger bunches just thinned, the varieties being principally Lady Downe's, Alicante, and Alnwick Seedling. A large number of bunches of the first-named were especially fine, being long, well shaped, and perfectly furnished with well set even-sized berries. Should these take on a finish equal to the Black Hamburghs in the early house they would prove formidable on the exhibition tables at our late autumn fruit shows. On an outer open wall also facing south we notice a very fine crop of Peaches and Nectarines.

Upon the lawns are numerous Conifers in splendid health and well furnished, ranging in height from 30 to 50 feet, amongst them being Cedrus atlantica (many fine trees), C. Deodara, Cryptomeria Lobbi, Cupressus Lawsoni, Wellingtonia gigantea, Thujopsis borealis, &c. The mansion is a many-gabled Gothic structure, a portion of it being of ancient date, but all in excellent repair. The west front commands a beautiful view along the finely timbered park, bounded on each side by woods, with a fine piece of ornamental water spanned by a handsome bridge in the foreground.

Perhaps the most beautiful feature of Firbeck Gardens remains yet to be described, and this is the terraces and flower gardens on the south front, in which Nature and Art appear to be so exquisitely blended as to form a picture worthy the pencil of a Turner. Mr. Eggleston is evidently a true artist, as although high colours are largely used in the composition of his picture, they are so well balanced and toned down by the surroundings that the most captious critic could scarcely fail of being pleased and satisfied. Carpet bedding is extensively and well done, appearing especially suited to the position, the Alternantheras and other tender plants being quite at home in this warm and perfectly sheltered glen. Amongst the varieties of Alternantheras used by far the best and most effective is an unnamed seedling raised at Firbeck by Mr. Eggleston, which is superior in brightness of colour to A. amœna, with the advantage of a vigorous habit of growth. The finest feature of the bedding was the numerous beds of Tuberous Begonias. We have never before seen these so thoroughly at home and so satisfactory in every way as bedding plants as we saw them at Firbeck. The plants are all very dwarf and stout, with large ornamental foliage, flowering abundantly, the flowers being all of the largest size and of the brightest colours.

Numerous large plants of Yucca gloriosa between the flower beds were throwing up strong flower spikes. A very striking feature on the upper terrace, which attracted the attention of the whole party, was what might very well be termed a trophy of succulents in the shape of an immense garden vase, the whole of which from ground line to apex was ingeniously covered, the lower half with the Californian House Leek, the upper half with Echeveria secunda glauca, the whole surmounted by a good specimen Aloe. The conservatory overlooking this terrace was well furnished with foliage and flowering plants and Ferns. A good addition to the general effect, as seen from the windows of this conservatory, is the lower terrace wall, which is covered and hidden by a coping of English Yew, 2 to 3 feet in breadth, kept closely trimmed, and quite flat about 1 foot above the ground line, and from which spring at regular intervals specimen oval-shaped bushes, almost perfect in symmetry, of the Golden English Yew.

After a substantial repast, provided at the village inn at Firbeck, and a visit to the beautiful village church, recently enlarged and thoroughly restored by Mr. Jebb at his own cost, the party returned to "black" and "smoky" Sheffield thoroughly satisfied with what they had seen and so greatly enjoyed.—W. K. W.

CABBAGES FOR SPRING.

I HAVE read with interest the chapter by "A Kitchen Gardener" on the above, and must say of the varieties I have grown I like Ellam's Early the best. I have not tried Webb's Emperor, but may do so another year. Last autumn we planted three varieties—viz., Ellam's Early, Early York, and Little Pixie. Ellam's Early was ready first, long before the others; in fact, very few of Early York have been cut, they have nearly all "bolted." No more of that variety for me. Little Pixie has not "bolted," but it has not hearted well, and is far behind Ellam's Early. I remember in my apprentice days, fourteen or fifteen years ago, it was thought a great deal of, and certainly was a good little Cabbage in those days.

I must take exception to "A Kitchen Gardener" about the time for sowing. He says, on page 90, August 2nd, "It will never answer to sow Cabbage seed early in July." Now that is just the date that does answer in this district. Ours last year was sown the third week in July, and was found to be too late; and if we had not obtained some plants which had been reared from seed sown in the first week of July, we should have been badly off for Cabbages the last two or three months.

We sowed the seed this year in the first week of July, and they are making so little progress that I am afraid they will be late for planting. I do not like to see them large in November, but I like them to have a good hold of the ground by the beginning of October, all growth being stopped by then in this district. We plant about the last week in August on ground from which early Potatoes have been lifted without any manure being dug in; 18 inches between the rows, and 1 foot apart. —G. HILTON, *Lancashire.*

BARLERIAS.

THIS is a large genus containing many very fine species which unfortunately have not been introduced in a living state. They are distributed over the tropical portions of both hemispheres, nearly fifty species being known as African, whilst the peninsula of Hindostan is very rich in members of this genus. They thrive best in good light soil, and as their growth is rapid we certainly prefer young plants every year.

B. Gibsoni (fig. 14).—A neat branching shrub, attaining a height of several feet; but handsome well-furnished plants some 2 or more feet



FIG. 14.—BARLERIA GIBSONI

high may be grown from cuttings in a single season; and as these not only bloom freer than old plants, but produce the finest flowers, there is no advantage in keeping the old ones. The leaves are upwards of 3 inches long, ovate-lanceolate and acuminate, deep green above, glaucous below, and somewhat coriaceous in texture. Flowers funnel shaped, produced in terminal and axillary spikes near the ends of the branches; lobes spreading, colour pale purple, the two upper lobes having a dark purple blotch in the centre. It flowers in midwinter. Native of Central India.

B. Mackenii.—A species closely allied to the preceding, but a native of Africa and not India, having been introduced from Natal, a portion of the world to which the public attention has been so earnestly directed during the past two months. It is a very ornamental plant, attaining the proportions of a small shrub. Stem slightly but very obtusely four-angled. Leaves somewhat ovate and subacute, recurved, about 3 inches long and nearly an inch broad; colour deep green, and clothed on the upper surface with small close hairs, as also is the stem. Flowers not so freely produced as in the preceding species, but very handsome,

funnel shaped; the limb flat, some 2 inches or more in diameter; colour rich purple, with an intense deep purple blotch on each lobe. It flowers during early spring.—T.

THE HEAVIEST STRAWBERRIES.

If "Saxoring" would make a search in the back numbers of the Journal from 1862 to 1866 he will see an account of heavy Strawberries either by "D., *Deal*," "Upwards and Onwards," or "Wiltshire Rector," I cannot remember which. They had several articles on growing Strawberries which contained much valuable information respecting weights. I do not remember the weights of Dr. Hogg likened to "ladies' bags," but Cockscombs weighed about 4 ozs. each, and these went to regale the bowlers or cricket players. I have had individual Dr. Hoggs weighing 2½ ozs., and Cockscombs 4 ozs. and one grain each. These Strawberries were sent to the editors of different papers, and I remember the editors had taken the pains to weigh them and recorded their weights. Cockscombs were so large that they would not enter the mouth of a common sized tumbler; but with me it was difficult to grow, and requires great care in its cultivation to ensure healthy and strong runners.

I have picked from a bed of Dr. Livingstone basketfuls of equal sized Strawberries, eight and ten to the pound; these were the first picked however, but when this Strawberry is well grown there are few small ones. Its lightish red colour makes it the favourite of market gardeners, and its robust nature and prolificness makes it the favourite Strawberry of all who try it. No Strawberry will grow under trees so well as it does. It is not so large as Cockscomb nor so handsome as Dr. Hogg or Sir Joseph Paxton and a host of others, but it will bear a crop where some of these as well as many of the finer new varieties fail, and from what I have seen would be equal if not superior to President, which it resembles. Dr. Hogg reported in the Journal on a sample of this Strawberry I sent to him as excellent, and Mr. Barron gave similar testimony on a basketful sent, but too late to put before the Fruit Committee of the Royal Horticultural Society some twelve or fifteen years ago. From a small plantation of well grown Dr. Livingstone planted upon rich, new, or virgin unmanured soil, I pulled 4 lbs. from each yearling plant. I always consider that it is waste of time and ground to allow Strawberries to grow longer than two years, as they exhaust the soil much, and it takes longer to have it in a fit condition for Strawberries again than when grown as annuals and then dug down. When this system is properly carried out better and more fruits are obtained, while a new plantation may be made three years after with safety, whereas six or seven years is early enough to plant after a four or five-years crop.

Many do not pay the attention to Strawberries nor the varieties necessary to insure success, and it is seldom we can depend on getting a Strawberry true to name. Vicomtesse Hericart de Thury is grown under a dozen names, or perhaps more, and is wrongly I think also named Garibaldi. The almost continued drenching rains we have had for the past two weeks defies us to test by flavour, but I have just been comparing a few growing plants of both, and while Garibaldi has broader leaves and a different hue than Vicomtesse, they are also reflexed, while those of Vicomtesse are not. When I have a difficulty about two Strawberries, I generally decide by the flavour of their foliage, which is sometimes as distinct as the fruit itself.—W. T.

MYRTLES IN THE OPEN AIR.

Myrtles are favourite plants. Their neat habit of growth and pretty green leaves are very pleasing, and their agreeable odour renders them still more acceptable. They are frequently grown as greenhouse plants, and I have noticed good specimens in windows, but plants in the open air are not often seen. Indeed, their culture in the open air is rarely attempted, and this is to be regretted, as fine Myrtles in the open air are always admired and attractive. In fact, they are generally looked on as curiosities; but they are more than this, and come under the heading of choice evergreens. I would not recommend Myrtles being planted in very exposed places, but they would succeed in many districts in sheltered nooks and against walls. I know many instances of their growing most luxuriantly against south walls. Here our largest Myrtle is planted against the south side of Margam Church. It is 18 feet high, 12 feet across, and projects a long way out from the wall. Some winters it has been injured by frost, but we never protect it; not even from 18° of frost, and it soon recovers in the summer. In August and September it becomes a mass of white blossom, and is a fit associate of Orange flowers. Should fear be entertained of their being injured by frost it is easy to mat them during severe weather, and the anticipation of their being injured by cold or bad weather would never deter me from planting them.

When young, Myrtles in pots are generally green and ornamental, but older plants are apt to become scraggy, and it is plants of this stamp that would soon be benefited by placing in the open. The present is as good a time as any to plant them out, as they would not receive any check now, and they would be hardened and established before the winter. They will succeed in almost any soil, but it is important that it be well drained, as wet and stagnant soil at the roots in winter proves far more injurious to them than a cold atmosphere.—J. M.

SOME RELIABLE VEGETABLES, WITH NOTES ON CULTURE.

From this time forward the shows will include vegetables; and gardeners and amateurs will be forming their opinions as to those they will grow and those they will discard another season. There is some wisdom in the old couplet—

> "Be not the first by whom the new is tried,
> Nor yet the last to lay the old aside."

I should be more inclined to agree with the latter proposition than the former, as I am a firm believer in progress; but from my own experience, and from constantly moving about among gardens and gardeners, and occasionally judging at shows, I am satisfied there are some very old vegetables—*e.g.*, the Ash-leaf Kidney Potato—Myatt's, Rivers', or Veitch's; Snow's Broccoli, Walcheren Cauliflower, &c., that time writes no wrinkle on their deserved popularity. The difficulty seems to be to get the real "Simon Pure." Permit me to notice a few varieties, briefly of each, to which others can add.

Potatoes.—Early and general crop. For the first time I have on trial this season a real rival for the old Ash-leaf Kidney in Carter's Earliest of All. Though for thirty years raising seedlings and trying different varieties, I have hitherto steadily maintained my preference for the old Ash-leaf for first crop. The produce is limited but the quality is unsurpassable. Earliest of All has the same good qualities, and more than twice the produce. Another very promising early Potato is Delight. For general crop, either garden or farm, many still grow the Champion for midseason, and Scottish Queen or Magnum Bonum for to wind up the late with. I prefer The Hero or Laxton's No. 10 to either. As this season is exactly the reverse (very wet) to last, which was very dry, different results must necessarily be obtained. I regret to say the disease has already become general among early varieties here.

Cauliflower.—Those who have their early Potatoes removed and have strong plants to put in at once, may expect good sized heads before frost sets in. The quickest to turn in, and of superior tenderness, is Extra Early Defiance. Dwarfer and hardier is Mammoth, while Walcheren will not mind a few degrees of frost. Veitch's Autumn Giant is indispensable. Ground can hardly be too rich for Cauliflowers, but I never manure after Potatoes in transplanting. If I think it necessary I give some liquid manure, and this would be necessary for those who exhibit, and where size was a consideration. For private use neither extra size, coarseness, nor too much manure should be encouraged. The latter, besides affecting the quality, diminishes the power of resisting cold, and the keeping properties as well.

Broccoli.—Those who have sufficient Cauliflowers planted already, as will in many cases be likely, will do well to grow Broccoli; then Snow's White Winter (true), to be followed by Mammoth Spring White and Cattell's Eclipse. Again, I say, if the ground has been already manured, and is fairly rich, neither manure nor dig—plant with a crowbar—they will stand the winter better in the absence of both.

Cabbages.—I still prefer Early Heartwell, and those gardening friends I recommended it to years since take the same view. A larger variety of the York shape of head is Mammoth Beef-heart. In this locality there is a variety of Early York called "Wellington" that I am not aware is elsewhere known to fame; it matures early, is tender and juicy, and has little waste in outside leaves. They save their own seed, and thus maintain the purity of the strain. Flat Dutch is now seldom grown in gardens, occupying ground too long, and only fit for cattle—too coarse.

Celery.—Except for the last succession it is now too late to plant Celery, and even then the plants must be large and well established. In spring I have often seen a preference given to the Celery last planted as being "younger" and more tender than the great specimens thick as your arm, and 3 feet long. These last are only fit for the kitchen, and it is doubtful if judges should not give a preference to the former, except the schedule otherwise specifies. Hollow Celery is of course inadmissible. I may here mention I have found a sprinkling of soot an antidote to the ravages of the Celery fly. Do all your readers know that Celery is one of the best anti-rheumatic agents, and for that purpose best used uncooked? Solid Ivory White is one of the best in quality, but not so hardy as Standard Red. Henderson's White Plume is very handsome, but requires litter thrown over the lines in winter, and even thus it rapidly decays.

Parsnips.—The best quality variety I know is Maltese; but if properly cooked, mashed, and served with gravy, Hollow Crown has a preference where quantity is a consideration. The constituent analysis of this vegetable places it higher than its popularity will ever reach.

Beans and Peas.—For the former and show purposes the greatest size is attained by Leviathan. I saw them 20 inches long at Manchester

Show, and the same at South Kensington in 1887. For family table use, however, I prefer Green Windsor. Peas require more space to notice than you can spare, so I shall merely mention half a dozen my gardening friends give a preference to, in the order of succession—Lightning, Anticipation, Daniel O'Rourke, Stratagem, Telephone, and Pride of the Market, with Ne Plus Ultra as a substitute for any other.

GARDEN TURNIPS.—I find I have exhausted the permitted space and without including many vegetables that most gardens require. I am among the majority in preferring golden or yellow-fleshed varieties. They are firm, sweet, and of better flavour. None better than Golden Rose. If white is desired take Jersey Lily; if black, Chirk Castle is still unique.—W. J. MURPHY, *Clonmel.*



INCIDENTS OF THE JOURNEY TO THE WIRRAL SHOW.

THERE were seven on Tuesday night in one carriage on the Irish mail from London; four were warriors of the Rose, wending their weary way to Wirral Show. Consequently, some of us had to court the god of sleep sitting bolt upright. The carriages were beautifully cushioned, though the oscillation was considerably more than on the two other northern lines. One of our party was one of the two indefatigable ladies without whom no great Rose Show would be complete. At Crewe some of the western exhibitors joined our contingent, and by 2.30 we reached Chester. Here we changed to the Birkenhead train. The guard, on being asked if our van of Rose boxes would be put on all right, replied that he knew nothing whatever about it, but would see what could be done. Most of our party had already settled themselves into various corners of the carriage; I was waiting news from the guard. Suddenly looking round, I saw the train—without any apparent reason, except that it seemed tired of waiting—making headway out of the station. After a sharp run I landed into the guard's van, among the mail-bags and parcels. No guard was there, though. Evidently, I thought, we are only shunting. On and on we went, stopping at last within a ten-minutes run of Birkenhead. Presently the door opened and a light appeared. "Good morning," said I. "Good morning, sir. Where's the guard?" "I am the guard; what do you want?" "But where's the other guard?" "Can't say; all I know is I'm the only guard on this end of the train." "Well, I'm a passenger guard sent down to look after you." I told him all I knew, and he seemed to believe that, as the mail-bags were quite safe, I had not pitched the man out of the train. "This was the rummest go he'd knowed for a long time."

Imagine the dismay of our exhibitors when they heard that all their Roses were at Chester, and the next train would not arrive till nearly nine o'clock in the morning. A telegram soon quieted their fears, and in due time the boxes and guard arrived by a special train. By this time it was nearly four o'clock, and some of our party, as no waiting-room or other accommodation was provided, went across to the Homeside Hotel to turn in for awhile. The enthusiastic jovial Gloucestershire parson, the Herefordshire ex-champion amateur, the professional holder of the challenge trophy, and the Wiltshire nurseryman exhibitor grouped themselves round the door of the hotel, while all due efforts were made to arouse attention from the inside. It seemed surprising how much wit and wisdom could be displayed in spite of the early hour, the pelting rain, and the sodden thoroughfares. For some time the ominous growl of a dog inside was the only response to our appeal to the bell. Presently, just as we were about to move on, a sound was heard, and an unwashed, half-awakened, half-arrayed child of man, with just the amount of clothes on that never leaves him, peered his sleepy eyes round the door. He was greeted with a volley of questions. After a vigorous application of first one, then both, fists to each eye, to assure himself that we really had been indulging in a night of revel, the effect of which gave us the unsteady appearance his dull brain imagined, he gazed as steadfastly as his sleepy condition would permit at our friend of the cloth, and merely said, "*You* OUGHT to know different!" and vanished, locking the door before our splitting sides would allow us to interfere. It was a glorious joke, not to be lost for anything. Evidently there was every excuse for the rest of us, but the parson—he ought to "know different." There was nothing to be done but to return to the station, and for three dreary hours to kick our heels out.

May I venture to suggest that in future the Wirral Society make some preparations for the exhibitors whom they know will turn up by the 3 A.M. train? otherwise they will hardly get the competition in future they were fortunate enough in having this year.—W. H. W.

ROSE SPORT.

WE received on Saturday last, too late to send on to you, a curious sport of Madame Marie Finger Rose. The Briar from which the blooms were cut was budded last year. A fortnight ago the plant developed its first bloom, which was quite dark in colour. The two blooms we had sent us were both on the same shoot as the first bloom, but they varied considerably. One bloom was easy to recognise as a true Madame Marie Finger, with its fleshy pink colour, shaded darker in the centre, while the other was quite dark in comparison, about the same shade as Duc de Rohan. They had both developed simultaneously on the day before they reached us. On one shoot, therefore, we had at the same time two apparently quite distinct varieties of Roses.—KEYNES, WILLIAMS AND CO.

ROSE HER MAJESTY.

WHATEVER different opinions there may still be as to the merits of this Rose, it will, I think, be allowed to be the most remarkable new Rose of this decade. We all remember the sensation caused by the numbers and size of the blooms exhibited in the year when it gained the gold medal, its strange alleged parentage, the disappointment experienced when it failed to appear in the market, and altogether disappeared from view; the rumours as to the price required being beyond English nurserymen, and as to buds having been stolen; the report that Brother Jonathan's dollars had at last secured it at an extraordinary figure—all these circumstances, we remember, caused a considerable run upon Her Majesty when at last it appeared in the English trade, and many invested largely.

About this time, too, some expressed their doubts as to whether it was really a good Rose, alleging that it was coarse and wanting in regularity of shape. I was one of these, and a little chaff passed between me and my friend "F. H. G." in the Journal on the subject. He seemed to think it would generally be the "best H.P.," and I said it would never get the medal, being deficient in shape. All right! I am going to apologise presently. Well, we all remember what a comical feeling of disappointment ensued in 1886, when it almost universally refused to flower, and hardly anybody had a single bloom to show. We were obliged to postpone our criticisms for one year more, and in 1887 a good many blooms were shown. The general feeling with those who only saw the Rose as exhibited was probably that the adverse criticisms were upheld. At the principal exhibitions the majority of the blooms were like those shown for the gold medal—*i.e.*, expanded, and deficient in shape. Here and there, however, one or two might be detected which had been cut smaller, of better colour, and of far better form. I had two or three blooms, and by cutting them young I showed them of good shape, and, but for a caterpillar hole in one petal, should myself have won the prize for best H.P. with one of them at a local Show. It may possibly be remembered that I did express a more favourable opinion, accordingly, of Her Majesty, in the Journal last autumn; and I should now be ready to apologise to "F. H. G." and to Her Majesty herself for aught I have said against her, even if Mr. Lindsell had not actually won the medal for best H.P. with it at the N.R.S. Show at Darlington. (I have got seriously "mixed" with my pronouns, but, in proof of the sincerity of my apology, will give Her Majesty the benefit of her sex in future.) It seems to me that Her Majesty was libelled by Mr. Bennett himself when first shown. It is a wonderful quality in this Rose, especially considering "her" parentage, that she remains full, shows no eye, and is still presentable, even in the expanded state; but she is then quite past her best, for in a younger state she may be shown of beautiful form and colour, and will, I have no doubt, gain many more medals.

But, though the young bloom is sometimes of the sensational character which has attended Her Majesty throughout her existence, I am afraid that very little praise can be given to her as a plant. I forget how high one of the plants shown by Mr. Bennett in a pot was—certainly well over my head—the robustness of the growth and the size of the thorns seemed as sensational as the blooms: but I do remember how mean was the appearance and growth of some rows of maidens at Mr. B. Cant's a few days ago. Fully half of my own plants have not grown more than 3 or 4 inches, and I have had a proportion of about one bloom to seven plants. It seems that Her Majesty is not graciously pleased to approve of the weather which we have had to call summer this year; and, however much we may be disappointed, we must allow that it shows her sense. However, although the plant cannot be called a free grower or a free flowerer, I have no doubt that the blooms will be indispensable to exhibitors for many years to come.—W. R. RAILLEM.

A WEEK'S WANDERINGS.

BLACK PIGS AND WHITE ELEPHANTS.

IT so happened when I was at Swanmore that Mr. Molyneux, who is the Honorary Secretary of the Bishops Waltham Horticultural Society, had arranged to go on a tour of judging a number of cottagers' gardens. As I learned a carriage was engaged for a long drive, and there was room in it for a small man, I stole a day for what I thought would be an easy method of exploring the wilds of Hampshire. I had heard of "Hampshire hogs," and suggesting that we might see some, was met with the reply of "Yes, but they will be all black 'uns," and I was further enjoined to observe that wherever we found a particularly well cropped garden and vegetables of unusual excellence to look for the pigs, as there would sure to be some on the premises and they would as surely be black. And so it was. In nine cases out ten the owners of the most productive gardens were also owners of two or three black pigs. One assisted the other clearly, and both contributed to support the families of the sons of toil in the district. We saw many good pigs and good gardens that day, and thought the peasantry of the villages were not uncared for, and we could not fail to contrast the advantages they enjoyed in comparison with their fellows in the pent up and

stifling lodgings in London to which so many had come, tempted by higher wages to "better themselves," even at the risk, often a deplorable reality, of being half of their time out of employment. It is to the advantage of all to keep the workers on the land for developing its resources, and if this cannot be done in the best manner in large tracts it can be in smaller plots, and in the parishes visited the clergy were taking an active interest in encouraging garden culture and providing plots of land for their humbler neighbours.

It was very noticeable that the offering of prizes for the best kept and cropped gardens was exerting a wholesome influence in stimulating effort. The gardens in competition were remarkably neat and closely cropped, and very few of the others were wholly neglected, as only the most careless of persons are contented to remain very far behind their neighbours in the condition of their home surroundings. Field allotments were also found splendidly cultivated, and it was pleasing to see that the rector of the parish (Durley) took as much pride in them as did the tillers themselves. But what about the Elephants? It is scarcely necessary to say that these are Potatoes.

It is surprising how far and how widely the White Elephant Potato has spread. It is evidently a great favourite with cottagers. In northern and southern gardens we find its culture extending, and in the Hampshire plots it preponderated over all other varieties. Large luxuriant breadths were seen everywhere, and could not be mistaken, covered as they were with great bunches of white flowers, rising above the spreading walnut-like leaves, and producing in the mass quite an imposing effect. But do all the growers know that when the blossoms set and seed berries swell to maturity, that they will check the growth of tubers if the so-called "apples" are not removed? It will "pay" any cultivator to cut off the trusses when the flowers fade, and the sooner it is done the better the results will be. The ripening of such a large crop of seed takes as much plant nutriment out of the ground as the tubers do, while the seed is of no value, and practically represents waste. Clergymen who read these notes, as many will, if they have time and patience to do so, may do the peasantry of their parishes a good turn—at least those who have a heavy crop of seed on their White Elephant Potatoes—by advising them to take off the trusses at once.

We now pass to another phase in these wanderings, and leave parsons, peasants, pigs, and Elephants to help each other in the economy of village life.

TWELVE HOURS OF JUDGING.

The day that was entered on as a day of ease, lolling in a carriage, turned out a day of hard labour—pleasant labour, no doubt, yet exhausting. Does this raise a smile? It is easy to imagine it may do so. Riding about from garden to garden judging hard work, pooh! But has anyone who doubts tried it from half-past eight in the morning till beyond that time at night, rushing from parish to parish over forty miles of roads, pacing up and down forty-nine gardens, examining critically every crop, estimating its value, and recording it, finding in some gardens thirty varieties of vegetable and bush fruits to appraise? If he has done this thoroughly, shirking nothing, he will think he has done a good day's work if nobody else does, and be ready for a little rest at the end of it. It was most gratifying to see the admirable condition of many of these gardens, the careful cropping, admirable culture, the trimness, cleanness, and evident pride taken in them. The winners of the prizes were worthy of them, and it is a pity there were not a few more to award.

The manner in which the judging was done may perhaps be suggestive to others interested in work of this nature. It is not advanced as by any means a perfect system, and if improvements can be proposed so much the better. It may be stated that, for the purpose of putting all the competitors on a level, the day of inspection was kept secret till the morning previous, on which day each competitor received a postcard, so that one evening only was allowed for trimming up. This had been taken advantage of, as might be seen by the freshly clipped hedges and general cleanliness of the paths and beds. The principle on which the judging was done differed somewhat from that which is generally followed. It is customary to give either three or six points as the standard of merit of all vegetables, and then as they fall from that standard to enter the figures accordingly. A standard of three marks is quite inadequate for working from, as the gradations in merit cannot be expressed with sufficient exactitude. A standard of six is far better; but as all vegetables when grown in the best manner are not of equal service to cottagers, it is surely right to give more marks to the most useful kinds than to others that are not essential in cottage homes; otherwise the man having the greatest number of varieties, whether of service or not, would, even if some were not well grown, score higher than another who grew a less number of the most serviceable and grew them all well. For instance, good Potatoes, Peas, and Cabbages are more worthy of honour in a cottage garden than Radishes, Beet, and Mustard and Cress. It was therefore determined to make eight the standard of merit for Potatoes, Cabbages, Peas, Broad Beans, Scarlet Runners, Onions, Turnips, Carrots, Parsnips, and Winter Greens, these including Broccoli, Brussels Sprouts, Savoys, and Kales, the same number of points being the maximum for order. For everything else, including bush fruits, six points represented the standard of merit. The plan worked very well, but is open to improvement, if in no other way than making ten the maximum both for Potatoes and order, owing to their commanding importance, and probably other modifications might be made with advantage. The cultivation of flowers was encouraged by ranking them with the order of the vegetables, with eight points as a maximum, a few flowers well tended making the village homes more bright and cheerful, though the primary object in country gardens is utility. The names of the prizewinners are not given, except in two cases, where the contest was very close for the champion prize for the best cropped and kept garden in the whole district. Both the gardens are in the Swanmore parish, and the manner in which the prize was won by Mr. C. Baker and lost by Mr. E. Ainsley is shown in the following figures, there being a difference of two points only between the competitors. The figures will also make clear the method of judging.

CHAMPION GARDEN PRIZE.

The figures in the first column represent the points won by Mr. Baker; in the second those won by Mr. Ainsley.

Varieties.	Points of Merit.	
	Baker.	Ainsley.
Potatoes	8	8
Cabbages	2	6
Peas	10	7
Broad Beans	4	3
Scarlet Runners	7	1
Onions, spring and autumn	12	10
Turnips	5	3
Carrots	2	7
Parsnips	4	5
Winter Greens and Broccoli	8	4
Cauliflowers	6	4
Vegetable Marrows	4	4
Dwarf French Beans	1	1
Red Cabbage	5	4
Celery	6	5
Rhubarb	1	4
Cucumbers	1	2
Parsley	2	1
Mint	0	1
Lettuce	2	4
Radishes	1	2
Mustard and Cress	2	0
Beet	1	1
Tomatoes	3	2
Spinach	1	0
Black Currants	4	2
Red Currants	1	3
Gooseberries	3	4
Raspberries	0	3
Flowers	6	7
Order	5	5
Shallots	2	5
Leeks	2	1
	121	119

It will be seen where the competitors were strong and weak respectively. It should be explained that two extra points were given for Peas in the first column. They were so extraordinarily fine that the addition was necessary in the interests of justice. Spring and winter Onions are added together in the columns; in the judging Mr. Baker had seven points for the former and five for the latter, Mr. Ainsley having six and four respectively. Both men deserved medals for the excellence of their work.

After spending a couple of days with Mr. Molyneux, pleasantly, and it is hoped not unprofitably, I thought I would go on a little exploring expedition to the Isle of Wight, and see if I could find Mr. C. Orchard. He was discovered in a delightfully situated house overlooking the Bay of Sandown. Another discovery was made—a *ci-devant* gardener, a gentleman who has wielded the spade and worked as hard as any reader of these notes, but now an alderman and magistrate, who drives his carriage and pair on land and runs his steam yacht on the sea, who will one day be an M.P. if he can obtain votes enough; but he is a true gardener still, in full sympathy with the craft, and gives its accredited representatives a genuine grip and greeting. Mr. Orchard is his friend and helper in a great work; he is the master of a harbour and appears to be the controller of a railway, over which he gave me a free pass during my sojourn in the Isle—unfortunately too short, the rain driving me home, but only, I hope, to go again another day. But who is this ex-gardener? It must suffice to say at present that he has worked his way upwards by his ability, high character, and indomitable perseverance. I will hope to tell who he is and show what he is like another day.—A WANDERER.

NOTES ON FLORISTS' FLOWERS.

AURICULAS.—In one sense the cold weather we have experienced in what is regarded as the hottest month of the year (July) has been favourable for a plant which, like the Auricula, dislikes heat. My frames, quietly ensconsed at the back of a hedge and facing north, have been delightfully cool, and the plants have evidently rejoiced in it; but there is another side to the question. Are not the plants just growing a little too well, and may we not expect a considerable amount of autumn blooming? That at any rate was Mr. Ben Simonite's opinion when I was talking the matter over with him at the Carnation Show, and I can hope that his anticipations may not be realised, but he is too intelligent an observer to make one think lightly of any opinion he puts forward. Of course greater care will be necessary in the matter of watering during the cold and dripping weather that we have experienced for so long. The plants must not be allowed to flag, but they should not be so liberally supplied with water as in ordinary seasons. I repotted mine during June, somewhat later than usual, and found in so

doing a large quantity of woolly aphis on some of the plants. This I carefully removed, and washed the roots where virulent, but I am less distrustful of it than I used to be. I do not think plants ought to have it, but I think unless it attacks the collar of the plant it does not do a great deal of harm. I have noticed that several old plants have gone off in a species of black rot, the cause of which I am unable to discover. May it be that the Primulæ are not very long lived? and that as we find with many of the species it is best to keep them up by occasional sowings, so it may be that these old plants are only following the ordinary course of nature and dying of old age; if so, not only the advantage but the necessity of rearing a good progeny of offsets is evident.

CARNATIONS AND PICOTEES.—The season has had a wonderful effect on these plants. This was fully evidenced by the Show held at the Drill Hall on July 24th, when so very few flowers were staged, and some large exhibitors were utterly unable to put in an appearance. The long cold and wet time in the latter part of June and the first three weeks of July (indeed, not much better since) so retarded the bloom. It always used to be thought that the 20th July was about the right time, and in some seasons it was quite late enough, but I had neither in the borders or in pots a single flower open at that time; but the same weather which militated against the bloom was favourable to the growth of the plants, and in most cases luxuriant, but perhaps a little too sappy, foliage is the result. My small collection is now under glass, not in a house, but simply a glass roof, open at all sides. Here I hope that the "grass" will ripen somewhat before layering begins, otherwise there is a likelihood of the layers damping. Some of the foliage looks what John Ball calls "gouty," but it is generally very fine. The material for layering should now be ready; it ought to be light with a good admixture of sand or grit, so that the young roots may easily push out their roots. The best pegs are those made of bracken. Few care to layer the plants while they are in bloom, but no time should be lost after that, as they will be late this year, and it will be well to get everything ready for the work. Those who grow in pots have a great advantage, as the operation can be performed under cover, and the plants brought up to a comfortable height. It is backbreaking work to layer them on a bed, although many are obliged to do so.

CHRYSANTHEMUMS.—The wet time has been favourable to these, and they have grown luxuriantly, so much so that it will be necessary to be very careful about staking them, as they stand a good chance of being snapped off. So many directions were given last week in the Journal that I need not dwell on this flower. I have found earwigs a great nuisance, and I am afraid many of the shoots are seriously injured by their depredations. They seem to be uncommonly abundant this season, but as yet, strange to say, they have not troubled my Carnations and Picotees much.

GLADIOLUS.—Very very backward is what we must say about these. On the 26th July I have always been able to cut a spike of Shakespeare; if I cut one three weeks hence it is as much as I shall do. My plants look uncommonly strong, although the foliage is somewhat yellow, but this I attribute to the great quantity of rain; it is not the yellow which denotes disease, for I believe this still to be the cause of our losses. There are some who still write and talk about degeneration, but this is all moonshine. I met an American grower lately, when I had a long talk about our favourite flower; I asked him, Did he lose any? "Oh, yes, of course I do," was his reply, "but perhaps not so many as you do in England, as our autumns are more favourable." But still they have the disease. When good folk shut their eyes and ears and ignore the plain statements of scientific observers, what can we say? I very much fear that the flowers will be late for the exhibition at the Crystal Palace, and that the northern exhibitors will be handicapped. As soon as the spikes begin to show themselves staking should be proceeded with if it is desired to keep them in good condition. I had thought of mulching my beds with cocoa-nut fibre refuse, but this wet time effectually prevents all necessity for that.

PANSIES.—The cool and wet weather has just suited these. My small collection is grown in pots, and last year when I took them out of their pots and planted them out they suffered terribly from mildew. This year it has not appeared, and the plants look most vigorous and healthy, and keep blooming away very well. I am thus hopeful that they will now get through the season (summer one can hardly call it) without many losses, it being more like what they are accustomed to in Scotland, where they flourish so well. Of course, I mean fancies, for I confine myself almost entirely to these; they are so much more vigorous than the show sorts, and there is so much more beauty in them.

RANUNCULUS.—It has been a somewhat difficult matter to get these up in proper condition, and yet one dare not leave them in the ground after they are fit for taking up, for if once they begin to shoot out afresh the growth is utterly useless. And at the same time it does not do to take them up too soon, as then they shrivel up and lose vigour, so that in a wet season such as we are passing through they require to be very carefully watched. I have never been able to dry mine as the Dutch growers dry theirs; they come over in such plump condition, whereas mine have been more or less shrivelled. When they are thoroughly dried they should be put away in some cool and airy place, but free from frost.

ROSES.—There is a very strong growth in Roses, and those who wish to encourage them to make fresh wood will not hesitate to apply liquid manure, and the heavy rains we are now experiencing will speedily wash it down to the roots. All dead flowers should be carefully taken away, as they spoil the appearance of the beds. The dark red Roses rejoice in the cool weather, and open freely, but many of the light-coloured varieties are just simply a ball of soddened leaves. It is very difficult, too, to keep the beds free from weeds; hoeing is of no use, and it is only by hand-weeding that they can be kept clean. When the plants have sent up long shoots, say 5 or 6 feet, it is better to stake them, as they are very brittle, and a high wind is apt to snap them across. Now is the time for budding, and a good time it must be; carefully, when you have the opportunity, select the buds from a blooming shoot.

TULIPS.—The bulbs of these are very strong, and there is nothing to say about them except that they should be stored away in a dry place either in boxes or bags.—D., *Deal*.

THE WEATHER.

IN connection with the extraordinary weather experienced during the last few weeks, the following meteorological particulars supplied by Mr. Simmons, the aëronaut, will no doubt be of general interest:—"In the balloon 'Rockwood' on Wednesday evening, August 1st, my experience was not in all respects a desirable one. I left the Anglo-Danish Exhibition at 6.15 P.M.; at 6.20 I was between one thick cloud stratum at an altitude of 6000 feet, and another at an altitude of about 10,000 feet. I had some suspicion that there was a current from the west. I looked in a direction which I conjectured to be east, and from that quarter came swooping on a great mountain of purple fire. The rumbling I could scarcely distinguish from the buzz of London, and I felt assured that as long as the sound was so faint there was a great distance between me and the storm; but at seven o'clock it was nearer to me. I tried then to get on a lateral level with it, but to this end I must have parted with my precious store of ballast, and, finding the thunderstorm keeping up a stern chase, I peered below the cloud stratum to see if I had a chance to descend. I found myself in rather too close proximity to a town or village. I have no idea what place it was, but I was bound to escape it by soaring again, and when I did so I estimated that the thunderstorm was about sixty miles behind me (to the N.E.). Then at 7.15 I had another suspicion that I was being borne upon a western current, for I could hear no sound but that like the surf upon a shore, and I again came down. When I did so I was convinced that the sound of the water must have been a mill race or a weir. I landed safely at Guildford, and the storm by which I had been so hotly pursued did not burst upon the earth until I was on my way back to London.

In Paris the weather is described as dull, with intermittent gleams of sunshine, and so far there has only been one shower to-day—a phenomenon for which the inhabitants of this gay metropolis are devoutly thankful. Deplorable accounts, however, continue to come in of the devastation caused to the crops throughout the provinces. M. Risler, the President of the Agricultural Society of France, than whom no better authority could be found, frankly describes the situation as bad. To begin with, the hay is completely spoiled. Before this deluge commenced there had been a slight drought, but now it is impossible to dry the grass that has been cut. The cattle are feeding on it as it lies, and soon the supply will be exhausted. Ere long the peasants will be compelled to kill their animals, and meat will be at a discount. As for the corn, it cannot ripen, and the bakers will be obliged to buy home produce at a very high rate and to raise the price of their loaves. Farmers, in their turn will be confronted with the competition of the Russian and Hungarian cereals. The rains have proved beneficial to the Beet-root crop, the prospects of which would be excellent but for the untimely appearance of the little insect which preys upon it. Potatoes, on the other hand, are simply rotting in the ground. As regards the Grapes, M. Risler is of opinion that the vintage will be of inferior quality this year. He says that as matters at present stand French agriculture has already sustained a dead loss of half a milliard of francs, but that if the bad weather lasts for another month the crisis will attain dimensions which he cannot contemplate with calmness. Such a catastrophe would mean "short commons" and hardships for many. In fact, the outlook is as unpromising as it well can be.

RECENT RAINFALLS.—According to *Bell's Weekly Messenger* the amount of rain reported by the Meteorological Office on Thursday, August 2nd, was 1·26 inch measured at Brixton, while at Greenwich the amount was 1·29 inch. The average total fall for August is 2·26 inches, so that in the one day the amount measured was considerably more than one-half the average fall for the whole month. This is the fourth time since June 26th that upwards of an inch of rain has fallen in less than twenty-four hours in London and its vicinity. In July the total fall of rain at Greenwich was 7·09 inches, which is rather more than three times the ordinary average, and is 1·20 inch in excess of the largest previous fall on record in July; and since 1813 there have been but four previous years with a fall for the month in excess of 5 inches. In June and July the total fall of rain at Greenwich was 10·45 inches. There is no instance since 1813 of a larger rainfall for these two months than 8·49 inches, which was measured in 1880, and there are only thirteen years in all with the rainfall for June and July in excess of 6 inches. In all but four instances out of the thirteen these excessive rains were followed by a wet August, so that the outlook is not very encouraging. From June 26th to August 1st—a period of thirty-seven days—the fall of rain at Greenwich was 10·60 inches, whereas the ordinary total for the whole twelve months is less than 25 inches, and last year was less than 20 inches.

Writing to the *Standard*, Mr. J. Kelway, Langport, Somerset, says :—"The amount of July rain at Eltham, 'usually a remarkably dry district,' has exceeded the rainfall at Langport, which is an unusually wet one, by 0·12 inch. The rainfall here amounted to 6·62 inches in twenty-four days on which rain fell. Two of these days of rain amounted to over an inch each—1 inch on July 30th, and 1·16 on July 8th. Three waterspouts are reported to have burst in the vicinity on July 30th."

Mr. Warwick Stunt, Rochester, also remarks :—"It may be interesting to some of your readers to know the amount of rainfall we have had here the last thirty-six hours, and which has amounted to 2·66 inches. The greatest fall took place on Wednesday, August 1st, from 9 A.M. up to 3 P.M., when I registered 1·32 inch. This was probably the end of a waterspout which I am told burst in the Medway river about three miles from here."

Mr. R. Gray observes :—"The rainfall for July at Chevening, Sevenoaks, elevation 360 feet, with a southern aspect, is 6·58 inches. It would be interesting to know the rainfall at other places for the same month."

Mr. J. B. Dimbleby, Memorial Hall, London Street, Bethnal Green, London, E., sends the following on "Weather Causes and Effects" to an evening paper :—Respecting the weather cycle of nine years, will you allow me to say that what led me to its discovery was the observance of certain astronomical causes, and when I looked for the effects I found them in excessive rainfalls. The causes are—1, the moon on the same level with the earth ; 2, her nodes in a direct line with Great Britain ; 3, her position in perigee, or when nearest to the earth. The effects are—1852, a rainfall of 38 per cent. above the average, the wettest year on record ; 1861, floods, drowning people in their houses and sweeping agricultural produce away in the north, associated with cold and a rainfall of 18 per cent. above average : 1871, 21 per cent. in excess ; 1879, cold, and 16 per cent. above average ; 1888, probable 40 per cent. The present year is similar to 1816, a remarkable ninth, which for cold and wet produced a famine in Paris. If this ninth-year cycle be extended, it will pick up all the wet and cold years and severe winters with much snow.

Notes & Gleanings

Events of the Week.—On Friday, the 10th inst., the Royal Botanic Society will hold their anniversary meeting in the Regent's Park Gardens. A meeting of the Royal Horticultural Society's Committees is announced for Tuesday, the 14th inst., a show at Claycross also being fixed for the same date. On Wednesday, August 15th, shows will be held at Reading and St. Albans, while on the 16th, Maidenhead, Ludlow, Aberdare, and Abingdon Societies have their annual shows.

—— As will be seen from the Weather Notes on the preceding page an extraordinary rainfall has been recorded in some parts of England, and we shall be pleased to receive further particulars of the effects on garden crops and flowering plants.

—— The Rev. F. D. Horner desires us to announce that the Northern Section Show of the National Carnation and Picotee Society is postponed to Saturday, August 18th, and will be held at the Royal Botanic Gardens, Manchester, under the auspices of the Royal Botanical Council.

—— A Wrexham correspondent sends us a strange example of a Fasciated Asparagus Stem. It appears to have been formed by the combination of a number of small stems, the peculiar flattened production resulting being 3 to 4 inches broad, about half an inch thick, and a length of about 2½ feet is twisted into a series of close short coils.

—— The Potato Disease.—"C. O." writes : "The Potatoes in the Isle of Wight are sadly smitten with the disease, which will be a great loss to the allotment holders, who reckon to pay their rents and labour, and keep some in store for their winter consumption of the produce. It spread rapidly from the early and midseason varieties on to the Magnum Bonums, Imperators, and other late varieties. I have advised pulling the haulm to partly save the crop, as the writer of the excellent leader on the subject advised in last week's Journal. It is a question of time with some, whose labour depends on their own hands, but to employers of labour it is the most profitable that men could be put to, and not a day should be lost." It was only advised in the article mentioned that the haulm of early varieties nearly ready for lifting should be pulled.

—— Annual Outing.—We are informed that Messrs. John Laing and Sons' (Forest Hill Nurseries) employés, to the number of eighty, spent a most enjoyable day on Friday last (August 3rd) at Brighton.

—— From Mr. W. Dean, Solihull, near Birmingham, came specimens of his Auricula-eyed Sweet Williams, which are very distinct from the ordinary types, the ground colour being rich magenta, a large clearly defined pure white centre, and a wire margin of white.

—— Gardening Appointment.—Mr. G. Waller, for nearly three years general foreman at Billingbear Park, Wokingham, has been appointed head gardener to J. Godman, Esq., Park Hatch, Godalming, Surrey.

—— The exhibition of Tuberous Begonias out of doors at Messrs. J. Laing & Sons' Forest Hill Nursery will be a little later than usual this year ; but the plants will be in their best condition in the course of another week, especially if the weather continue fine and dry.

—— The Brookfield Horticultural Society recently held their fourth annual Cottagers' Show at Highgate, when no less than 300 exhibits were staged as against 250 in the preceding year, ample evidence that the Society's efforts are appreciated in the district. Special encouragement is given to the cottagers cultivating allotments in the neighbourhood, and a considerable improvement has already been afforded by stimulating a little healthy rivalry. The President is the Rev. C. T. Ackland, and the Hon. Sec. Mr. F. Marshall, 7, Woodsome Road, Highgate Road.

—— Peaches in America.—It is said that 8,000,000 baskets of Peaches are expected from Delaware and Maryland this season. It will be the largest Peach crop ever gathered. Last season the same territory furnished only 1,500,000 baskets, and the whole crop, including that of New Jersey and the Hudson Valley, amounted to only 4,500,000 baskets. They are packed in neat crates holding twelve dozen Peaches, and each Peach is kept separate by pasteboard partitions. In England the outdoor Peach crop is very irregular ; in some districts the Peaches on outside walls are very satisfactory, and in others the crop is practically lost.

—— In the grounds of Easton Lodge, Dunmow, the residence of Lord and Lady Brooke, a successful Cottagers' Exhibition was held on Wednesday, August 1st, in which over 200 competitors took part. Plants, flowers, fruit, and vegetables were largely represented by exhibits of capital quality in such a season as this. Prizes were also provided for the best cottage or allotment gardens in the seven neighbouring parishes, sixty-two being entered for competition, all of considerable merit, and in one of the parishes the gardens have the reputation of being not only the best in the county but amongst the best of their kind in England.

—— Referring to Chrysanthemum multicaule "D. S." writes :—"Unlike most of the other annual Chrysanthemums this is a very dwarf and exceedingly pretty one, growing only a few inches high with small foliage close to the ground, slender footstalks, and small rich yellow flowers, resembling a Buttercup. I sowed the seeds in a cold frame early in April and planted out the end of May, and I am much pleased with it. As a miniature Chrysanthemum this will be welcomed, and it is useful for small beds or in various other ways. Most of the taller growing kinds are beautiful, but somewhat unwieldy in windy weather, but stormy weather seems in no way to affect C. multicaule."

—— "M. C. A." writes :—"I noticed in last week's Journal some notes in reference to large Melons that one of your correspondents was producing, and it occurred to me that this new departure on his part was hardly in accordance with the general tenour of his writings, in which, as far as I gather, he generally depreciates monstrous productions, and in that respect I quite agree with him. Large Melons above most fruits are, to my mind, great mistakes. I was once foolish enough to grow a few of these unwieldly things, and one, a particularly fine fruit of about 14 lbs., was carefully packed in a specially made box and consigned to the family then in town. A few days after, amongst other notes from head-quarters, was one to the effect that 'the Melon of magnificent proportions duly arrived in excellent condition, and was

much appreciated—by the servants.' As can be imagined this concluded our attempt at the production of these large fruits."

—— It is with much regret that we hear of the death of Mr. J. J. Jones, of Abberley Hall, Stourport, which occurred at Carlsbad on the 5th inst. Mr. Jones took great pride in his garden and in the improvement of his estates. He had recently added Orchid houses to his glass structures, and it was his intention to have gardening represented in the best manner in the several departments in charge of his able and trusted servant, Mr. Arthur Young. Mr. Jones was a gentleman of wealth and taste, and animated with a desire to have everything he undertook well done, not withholding the requisite means for accomplishing the object in view. He leaves a widow but no family.

—— Concerning Mimulus cupréus Prince Bismarck Mr. W. Dean remarks :—"This charming variety of a very dwarf miniature Mimulus was received by me from Germany in the spring, and the seed sown in April and pricked off in the usual way. Many of your readers will probably know Mimulus cupreus, a pretty bright rosy scarlet flower, small in size, with a dwarf habit of growth and small foliage, but very few know what a very lovely bedding plant it is. Mr. Hewitt, of Solihull, near Birmingham, who retired from the nursery business a few years ago, has a long border of it which stood out all last winter, and it has been a brilliant spot in his garden, and with fine weather will be again, but constant rain has served it as it has done many other things. Prince Bismarck is of a deeper richer colour, a superb variety, and amateurs may well note both as something to be looked after."

—— "B" writes :—"A new French Cabbage worth noting is 'Express.' I sowed a pinch of seed of this variety early in March, and nice heads are now ready for cutting. It is of dwarf compact habit, and rather larger than the Nonpareil type. Another Cabbage coming into prominence in the north is Walker's 'Imperial.' This is not so well fitted for a gentleman's table, but for market work it is most excellent, and for gardens where large vegetables are wanted it may well be worth a trial. With other novelties I had among Lettuces one named 'Balton de Bougival,' a Cos variety of large size, larger than Hick's, and turning in for use rather earlier. Those in want of a big variety should have this." [Vilmorin's Express Cabbage was certificated at Chiswick on the 11th ult.]

—— The Kew Bulletin for August is devoted to a summary of colonial reports in reference mainly to the cultivation of tropical fruits. The Colonies concerning which information is published are Jamaica, Bahama Islands, Barbados, St. Lucia, St. Vincent, Grenada, Tobago, Trinidad, and British Guiana. From twenty to forty distinct fruits are named for each colony, and in several cases it is stated at what time they ripen, the amount available for export, with approximate wholesale and retail prices. Several incidental matters of much interest are also included. Thus under the Bahama Islands it is mentioned that the Pine Apple crop amounts to six million fruits, the wholesale local prices being 2s. per dozen for the pick of the fields, others ranging from 1s. 6d. to 9d. per dozen. Of the Mango over one million fruits are consumed locally.

—— Leeds Paxton Society.—At the ordinary meeting of the above Society held at the "Grand Restaurant," Boar Lane, on Saturday July 28th, the President in the chair, and Mr. T. H. Wood in the vice chair, Mr. Gartery, Secretary of the Rotherham Gardeners' Mutual Improvement Society, read an excellent paper on the "General Cultivation of the Rose," in which he gave a lucid and full description of his system of growing this favourite flower. So thoroughly practical was paper that beyond a few questions being asked the lecturer (which were promptly answered) no further criticism was offered. On the motion of Mr. Frankland, seconded by Mr. Brown, and well supported by several of the members, who all spoke in the highest terms of the pleasure they had had in listening to the paper, a hearty and unanimous vote of thanks was accorded to Mr. Gartery for his lecture. A good collection of Roses (considering the season) contributed by the lecturer and members, graced the table and added to the pleasure of the meeting.

—— "J. R. S. C." writes, "In reference to the query put by your correspondent, 'W. T.,' I may remark that the history of the 'cuckoo-spit' insects, frog-hoppers, or cercopidæ, has had no new light thrown upon it recently. As showing the variations which occur, I may note that though he found the tribe common this year, in this locality there are fewer than usual. We do not yet know where the eggs are deposited by this group, nor indeed precisely when, but it may be assumed the egg-laying operation is completed in the summer, and probably the eggs are placed singly. The habits of the young larva or grub are not positively ascertained ; some think at first it is partly or totally buried in buds or expanding leaves before it secretes froth. There would be nothing unusual in a carnivorous fly, such as the slim empis or the more robust syrphus seizing a daddy-longlegs, as they prey upon larger and stronger insects. I presume he means by the phrase a crane fly or tipula, for this odd term is sometimes applied to other insects."

—— "J. H. W.," in sending three Bess Pool Apples for our inspection, remarks :—"After being gathered nine months we consider them good ; indeed, it is the best all-round Apple we grow, being excellent both for cooking and dessert, and as a rule the trees bear well when well established. There will be few Apples in this district (Leicester) this year, the trees present such a stunted appearance, and they have been badly attacked with caterpillar. Pears and Plums are moderate, Gooseberries and Currants abundant, Strawberries very scarce and badly flavoured owing to excessive wet." One of the fruits received was quite firm and all good. We have had many similar gathered from a very large tree, but it was long before it commenced bearing. It is stated in the "Fruit Manual," on the authority of the late Mr. J. R. Pearson of Chilwell, that his father once sold the crop from seven large trees of Bess Pool for £70, yet the son considered the variety to be "anything but a profitable one to plant." Still, a large orchard tree in bearing is useful, and there are not many persons possessing one who would be inclined to cut it down, though few, we suspect, would plant young trees for "profit."

—— The prickly-headed Poppy.—The prickly-headed Poppy, though one of our common British Poppies, affords a marked contrast to the common scarlet Poppy. It is the weakest in growth, and ordinarily the smallest of all our Poppies. Though not unfrequently met with in cornfields and on waste ground, it is scarcely so common as the common scarlet Poppy ; while it does not by any means force our attention to it by its brilliancy, as that species does. It is an annual. The foliage is scanty, the leaves much simpler in form than in the common species, the segments into which they are cut being few in number. The flowers have four petals, and these, from their great length in proportion to their breadth, give the flower a very decided cross-like form, instead of the circular form that, from the greater breadth of the petals, is seen in the other species of the genus. The red is by no means so intense as in the common scarlet Poppy, and each petal has ordinarily a rather large and conspicuous dark, almost black, spot at its base. The capsule that succeeds the flower, and contains the seeds, is long and cylindrical, and has its upper half studded with bristly hairs. The plant will generally be found in flower during the months of May, June, and July. The botanical name of the prickly-headed Poppy is Papaver Argemone. The generic name is open to a certain amount of uncertainty. It was first bestowed on the genus by Linnæus, and in many cases the motive that led to the adoption of the various names by the older botanists is now obscure. — (*Cassell's "Familiar Wild Flowers."*)

RHODODENDRON CULTURE.

(*Continued from page 102.*)

Among the soils which are most to be avoided are those containing much calcareous matter ; for useful as it is to many plants, an abundance of it is fatal to the well-doing of Rhododendrons. It is next to hopeless to attempt the cultivation of the plant in chalky districts or where limestone prevails. I will now pass on to another kind of soil which is said not to be so detrimental to the plant, and in which it is asserted by many that it will succeed well—I mean a clay soil, but I have seldom seen a satisfactory growth in soils of this class ; in fact, the places are so few where any approach to success has been made in such, that I have never recommended Rhododendrons being there tried, except in cases where they seemed to be a necessity. Clays, however, differ in their chemical qualities, and some may be more suitable than others, and may answer for the common kinds of Rhododendrons, but I do not advocate an extensive plantation on a stiff clay, and to mix clays with lime, as is often done for agricultural purposes, makes the soil less suitable. A clay not containing too much calcareous matter may be improved by mixing with it yellow sand in large quantities, as the latter often contains sufficient ferruginous matter for the Rhododendron, while a bright orange

sand too often contains more than enough. Much circumspection, and a knowledge of the character of the clay, are indispensable before acting in the matter. It is not easy to explain what are the features of a clay which may be converted into a fitting bed for the Rhododendron; one from which bricks are made is rarely suitable, especially if in burning those bricks shrink very much, but the stiff soils where the Brake Fern is found luxuriating may often be advantageously planted with Rhododendrons.

I have mentioned that the hard stone of the oolite formation, mingled with earth of a kindred description, often furnishes a singular but good soil for this plant; a not less suitable one is often met with where sandstone prevails, and I have seen plantations of this plant entirely amongst the refuse of a freestone quarry, as it was called in the north of England, differing merely in its component parts from the Bath stone so extensively used about London. This sandstone débris seems well adapted for the growth of the Rhododendron, and where it abounds the plant may be tried with every prospect of success. Indeed, I am not sure but crushed sandstone may be used with advantage in those cases where an artificial compost is necessary, or has to be added to the clays above referred to.

Other descriptions of soils might be discussed, but I have said enough to give the general reader an idea of what is suitable for the growth of the Rhododendron, or rather the soils are described in which it will thrive tolerably well, while I have attempted to point out those of a contrary description. I shall now turn to another phase of Rhododendron cultivation—one to which less attention has been hitherto paid than to soils—and that is the rearing of plants.

Preparation of the Young Plants for Planting Out.—Simple as this may appear, I believe it has more effect on the ultimate success of the plantation than is often allowed. It is not by any means sufficient to order a number of plants from a nursery and plant them at once; such a course has seldom been so successful as desired, and a casual glance at once explains why. In general the Rhododendron is only grown extensively in the trade by nurserymen occupying ground exactly suited to their wants, such as a good dry peat, vigorous growth being the result. Plants are ordered for some place a long distance off, and to be planted in a soil not by any means so well suited to their wants as that from which they came, and the distance being great the carriage is likely to become heavy; to lessen the expense the ball of earth attached to each plant is reduced to the smallest size consistent with the plant's living. Now, when we take into consideration the reduced size of the ball, and the indifferent soil it is removed to, we can hardly be surprised that considerable time is lost before the plants become established in their new home, and it is not unlikely that many will die under the ordeal. The remedy for this state of things, especially in the case of the common kinds, as Rhododendron pontieum, is to obtain a quantity of seedlings with half a dozen or more full-sized leaves on each, and plant them out in a nursery bed, in ground resembling that which they are ultimately to occupy. After having been planted about two years they will have become bushy plants, and may be taken up with balls entire, as their removal to their ultimate quarters is not a serious affair when they are on the spot, and may be said to have become naturalised to the soil and other conditions of the place. Those who plant R. ponticum extensively for game cover or undergrowth, I strongly recommend to adopt this plan.

A further recommendation in favour of the foregoing method is, that in places where rabbits are very numerous, few, if any, plants escape their destructive propensities, and it has often been asserted that Rhododendron ponticum is proof against them, but those who make the assertion have perhaps never witnessed those prolific marauders in such numbers as are met with in some localities, or they would have seen that this plant, though suffering less than many, is not exempt. I have often been led to think that where new plants from a distance are brought near rabbits they are the first to suffer, while those of home-growth escape. I suppose it is the novelty that accounts for the greater injury done; but I do not mean to assert that the home-reared plants all escape, but they certainly suffer less than imported ones; besides which, it very often happens that the latter have been growing more closely together than the others have, and a more delicate set of side branches may in some degree account for it.

As I only intend to explain the main points in the cultivation of the Rhododendron, it is not necessary to enter into details respecting the many varieties now grown. Persons who are doubtful of the soil or situation suiting them had better begin with the common ones first. The better-known Rhododendrons are likely to succeed in a soil and situation falling short of what may be called first-class; but most of the varieties generally called "hybrids," including the bulk of the named kinds, may be grown in soil such as I have described, and as a class they afford perhaps as great a display of floral beauty as anything in the gardening world, not even excepting the gorgeous Indian Azalea and the bedding Pelargonium, while as evergreen shrubs they are exceeded by few in point of long-continued beauty. R. ponticum, at least, may be said to be one of the hardiest plants we have in its capacity of enduring our winters, and most of the hybrids are equally so. I hope therefore where opportunity offers that the cultivation of this plant will be extended, and that groups of it will be planted in woods and other places from which cattle are excluded. For lining the sides of drives or roads through similar places no plant can be more appropriate, for where the soil is suitable, and it has had a fair start, it generally maintains itself against most ordinary vegetation. Wastes devoted to the rearing of game might also have a few specimens of this plant, not scattered singly, but arranged in groups; and if they were looked after for a year or two at starting they would take care of themselves afterwards. It is in such wastes that they thrive best; a trial of it is there well worth making. The sites for this plant are so many that there are few persons having the means who might not find a situation in which to try it and have the pleasure of unexpectedly meeting with a clump of this plant, say at the end of May, when it is in flower.—R. J. B.

SEASONABLE PLANT NOTES.

Lilium candidum.—To increase the stock of these in pots lift bulbs from the open borders directly they have flowered. Good sized bulbs may be potted singly in 6 and 7-inch pots, or four may be placed into 10-inch pots. Give liberal drainage, and employ a compost of good fibry loam three parts, one part of leaf mould, one-seventh decayed manure, and a liberal quantity of coarse sand. The old flower stems may be cut off close to the top of the bulbs. Press the soil moderately firm into the pots, and cover the bulbs with one inch of soil. They will do outside, but start better if they can be placed in cold frames, so that they may be protected from heavy rains until they commence rooting and growing again, which will be in a very short time. When this takes place they will be as well outside as in frames, only be careful to house them before the approach of frost. All who have not suitable bulbs can now obtain imported ones, which, if they are to do well the first season, should be potted directly they arrive. Considerable injury is done to this Lily if the bulbs are kept out of the soil for any length of time, as it is natural for it to commence growth at once after flowering.

Asters.—Plants from seed sown late may be lifted and placed in 5-inch pots; if five or six are placed together they are very effective for furnishing purposes late in the season. Quantities of late plants are being lifted and placed moderately close together in positions where they can be protected from heavy rains by frames. These afford a useful supply of flowers for cutting long after the general stock of outside plants have flowered. East Lothian Stocks from seed sown in April may also be lifted, but these must be placed singly in 6-inch pots. Arrange them in the shade for a few days until they become established, then grow them in an open sunny position.

Chrysanthemums.—Early flowering varieties are swelling their flower buds rapidly, and if a few are wanted in bloom place them inside in a cool airy house where they will enjoy full sunshine. These, as well as all varieties, must be carefully but liberally watered; weak stimulants may be freely given. The plants grown for the production of large blooms will now need constant attention until all the buds have been taken. As soon as they are formed remove the lateral growths that start from the axils of the leaves near their base; these are generally three in number, and must be taken out with the point of a knife directly they can be seen. All laterals below them must also be removed as they show, so that the plant can concentrate all its strength on the production of the flower. Top-dress the plants with rich material directly the buds have been taken to keep the roots thoroughly active. Feed frequently, but do not apply stimulants in a strong state. Overfeeding does more harm than good by bringing the roots to a standstill, and flat instead of deep globular flowers are the result. Cuttings from the tops of plants that have been allowed to grow may still be rooted. Large-flowering kinds should be rooted singly in 60's and be allowed to carry one bloom only, while small-flowering varieties may be inserted five or six together in 5-inch pots. These will soon root in cold frames if shaded from the sun. Directly they are rooted place them in a sunny position.

Tree Carnations.—Remove flower buds from the earliest plants as they appear, and encourage them to grow as strongly as possible. Water the plants carefully; at the same time do not allow them to suffer by becoming dry at their roots. Weak stimulants may with advantage be given occasionally. For this purpose clear soot water, or liquid formed by steeping cow manure in a tank, will suit the plants well. Vigorous plants that are not required to flower before spring may be placed into 7-inch pots at once. Use for a compost good loam, sand, and one-seventh of decayed manure. If aphides infest the plants syringe with or dip them in a weak solution of tobacco water. Layer such varieties as Gloire de Nancy, Souvenir de la Malmaison, and others for flowering in 6-inch pots early next season. Plants from which the flowers were removed in spring and transferred into 8-inch pots may now be placed into 10-inch, in which they will be flowered next season. These, if well cared for, will be imposing plants when in flower for the conservatory, in fact any position.—B.

Overcropped Fruit Trees.—Very heavily cropped trees, or any that have perfected a heavy weight of fruit, and which give signs of being overworked, will be much benefited by a good soaking of farmyard liquid manure, or failing this a liberal sprinkling of guano, superphosphate, sulphate of ammonia, or some other kind of artificial, ought to be washed in. Unless the trees are thus assisted, many of them, notably Plums and Pears, will have been or will become so much exhausted as to be unable to perfect a crop next year, even if they flower freely. Reckless overcropping and starvation at the roots is most to blame for the inability of many trees to perfect a crop every season. Properly treated, nothing but the most unfavourable weather will prevent profitable crops being annually obtained.—W. M.

THE DALMATIAN IRIS.

THIS beautiful species has been known to me under the name of Iris dalmatica for at least twenty-five years. I am aware that it is now classified as a variety of Iris pallida, still it is quite double the size in flower, foliage, and height to the so-called typical species. Anyway, whatever may be its family connection it holds its own in being by far the most strikingly beautiful of the bearded section of Iris. Professor Foster has given great attention to the Iris family, and I feel certain he is in a position to clear up the mystery, being extremely accurate. I recollect sending a bulbous species to an authority one year, who called the Iris by a well known name, and to which it certainly had no relation. The next year I sent it to Professor Foster; he at once recognised it as a scarce species, and only of recent introduction.—WINTON.

[The illustration (fig. 15) was prepared from a flower supplied by

FIG. 15.—THE DALMATIAN IRIS.

Mr. Fred. Horsman of Colchester, and was one of the most handsome we have seen; the colour a delicate mauve and rich blue.]

THE ROMANCE OF SEED-SOWING.

Every country child knows the appearance of a "Dandelion-clock," and has tried to "see what o'clock it is" by the number of puffs needed to blow away the round head of soft down at the top of the flower-stalk in autumn. Equally familiar is the smaller tuft of grey down on Groundsel after flowering, although most people do not know that the botanical name of Groundsel is Senecio, from the Latin *senex*, an old man, given to it on account of the colour of this down. Most of us can recollect the innumerable tufts of similar material flying all over a Thistle field long after butterfly and bee have done their work among the purple flowers. We have all seen Sycamore "keys" strewing the ground in June and July, and brown Ash "keys" persistent on the parent tree when October winds have blown nearly every leaf from its hold. The bonnie autumn berries in our woods, and the fruits of Blackberry and Strawberry have been gathered by children of younger and older growth many a time and oft. How many of us ever stay to inquire why Groundsel and Thistle possess their downy tufts, why Ash and Sycamore produce their "keys," or why many of the trees and plants are dressed in fruiting time with crimson and scarlet, purple and olive? Not only in order to the uses we make of them, we may be quite sure. "Dandelion globes" and "Thistledown blows" do not exist only to tell the time of day to a four-year-old child, or "he loves me—he loves me not" to the maiden of seventeen. Ash and Sycamore have "keys" for some other purpose than to form graceful, drooping clusters in June. The fruits and berries are not solely for decoration and digestion by human gatherers. Were these their only reasons for existence that would soon terminate in all probability. All these, and many others that we could name, gladden and delight us in various ways, as do the flowers that come before each one of them; but, as with the flowers, so with down-tuft and "key," berry and fruit; they all have their several missions to perform, in order to perpetuate the very existence of their species, and to hold their own in the battle of life. Acknowledging that while they last, they are, in a thousand forms and ways, beautiful and useful, I wish to try to show the definite uses of these "common things," and of some curious and wonderful contrivances to be found in plant life all around us. To come to the subject matter of this lengthy introduction, let us look for awhile at the various methods by which, either through external agency or intrinsic power, trees and plants manage to disperse their seeds, and to secure for their offspring a suitable home, and a fit and proper environment.

The first question that naturally arises in many minds will probably be, Why try to scatter or disperse them at all? Why not let them take their chance, and simply fall to the ground immediately underneath the tree, shrub, or annual, as the case may be, there to germinate and grow up into their parents' likeness? This is quite easily answered. In the case of trees, if all the seeds fell round about the trunk they would stand a poor chance, for if they ever germinated at all, the young seedlings would get very little sun, and a great deal too much overshadow, and would be further harmed by the "drip, drip," from the branches. In the case of both trees and plants, moreover, the large quantity of young plants would choke one another in the struggle for life; indeed, this not seldom occurs with some of our garden annuals, as we can easily prove for ourselves. Again, many plants soon exhaust the earth of certain mineral materials, and if their seedlings attempted to grow in the same soil, they would fail, the parent plant having used up the chief portion of such substances.

A parallel to this is found in the fact that farmers do not grow the same kind of plant for successive seasons in the same field, but vary the sort from year to year, choosing plants that draw different materials from the soil in consecutive years. "Rotation of crops" we call it, but it is not our own invention. We took centuries to find it out. The plants and trees knew of it long ages ago, and so were led to develope the various methods of ensuring a speedy and effectual transit of their seeds to other and better soil, where they might find their needed foods in rich abundance. Of course, in certain cases—notably of some very small annuals, whose roots practically exhaust the soil but little—their seedlings find a good position at once, and manage to flourish; those growing on sloping grassy downs or cliffs, too, stand a better chance, inasmuch as their seeds fall on ground at a lower level than that drawn on by the parent plant. Examples of this are seen in our wild Snapdragons, Wallflowers, and others growing in such profusion on railway banks or on sloping limestone cliffs. For the most part, however, those plants flourish best that develope tendencies that tell in the direction of effectual dispersion of their seeds.

I must not omit mention of one thing before detailing the methods of dispersion. Seeds must not be scattered until they are "ripe" and ready to set up their own independent existence. Hence we find all sorts of devices for protection of seeds during their growth. Some are enclosed in a thick, hard shell, such as Hazel Nut, Beech Nut, Spanish Chestnut, Cocoa Nut, Monkey Pot, and many others. Some are hidden away under overlapping wooden scales, such as the cones of Firs and their allies. Some are surrounded by thick fleshy coats, such as Horse Chestnut, Almond, Apple, Cherry, and the like. Walnut has a covering which is not only tough, but bitter to the taste. Mucuna, one of the Leguminosæ, has its pod covered with stinging hairs. Some have the calyx closed over the ripening seeds, as Winter Cherry, Strawberry-headed Trefoil, Herb Robert, and some others of the same order. The wild Rose fruits nestle inside the hollowed-out flower stalk which forms the hip, whose scarlet colour stands out in beautiful relief on the bushes in September and October. Many Clovers have the withered corolla for a covering to their seed-containing pod, and perhaps no plant better knows how to protect its progeny than Gorse, whose hair-covered pods defy wind, storm, and insect, until the seeds are fully ripe and ready to be scattered by the burst of the pods in the August sunshine.

Finally, there are some plants which by movement insure protection. The little Linaria of our rockeries and walls—"Mother of Thousands," as West-country folk call it, revels in sunshine, but as soon as it is fertilised, it pushes itself into some cranny or nook, hiding its seeds away until they are ripe. Dandelion keeps its stalk bolt upright during the three or four days of flower expansion, but it bends down close to the earth, and buries its flowers among the grass for ten or twelve days while the seeds are getting ripe, afterwards becoming erect once more, for a reason which we shall presently consider. Now let us see what are the agencies by which seeds are sent or carried on their journeys. There are four chief ones, besides one or two minor methods seen in only a few instances. We will take the four principal ones first of all.

I.—Water.—Under this head I include the action of rivers and ocean currents. Comparatively few seeds are carried by water, owing to their being, as a rule, unable to withstand prolonged immersion; but it is still true that the agency of water is a very important one, especially in the form of marine currents. Many seeds are small and light enough to need no further adaptation; but in the case of the larger kinds they must not only be able to answer to the law governing floating bodies, too well known to quote here, but they must also be absolutely impermeable to water itself. The Cocoa Nut rind is woody and fibrous. Hence these fruits can easily withstand the action of sea water and protect the seed within. They may be carried for thousands of miles over the sea, and yet when stranded the seeds can readily germinate. In this way we account for the wide range of this Palm and its presence on the main coral islands of the Pacific. Many seeds and fruits have thus been carried by the great current of the Gulf Stream from Mexico to the marshes on Ireland's western coast, to the lakes of the Hebrides, and to the Norway coast. Others have gone by currents from Madeira to the Canaries and thence to the African borders.

Rivers again act in a similar manner. Seeds and fruits are brought down from the mountainous districts and deposited among the level plains and grassy meadows, and thus we can easily account for the presence of such species in what seem to us strange habitats for them. Both in marine currents and in rivers the action of water in carrying seeds to any purpose is most effectual when the direction is from W. to E., or the opposite, because then the seeds are kept pretty much within the same latitude and therefore in similar climates. Hence they will grow and flourish where they eventually settle as well as they did in their former home. Currents going from N. to S. or S. to N. take them into unfavourable surroundings, and then they mostly perish.

Some seeds are specially fitted for water transit by the presence of air bladders variously developed—*e.g.*, those of Water Lily. Others have a smooth rind with an oily juice, such as those of Arrow Head (Sagittaria), of our water ditches. This peculiarity is, of course, of advantage in swampy and marshy districts, where the water dries up in warm weather, and the courses of the current vary so much.—H. W. S. Worsley Benison, F.L.S. (in *the Journal of Microscopy*).

(To be continued.)

THE COMMERCIAL REALISATION OF FRUIT.

(*Continued from page 105.*)

EXPORTATION OF FRUITS TO THE COLONIES AND INDIA.

The systematic packing of fruits, coupled with the practice of refrigeration, provides facilities that would enable them to be profitably shipped to the Australian and other markets of the world. The same appliances and means by which fruit can be successfully brought from the Antipodes can be employed in conveying it there. The steam vessels that bring home meats do not utilise their refrigerating machinery on the voyage out, and doubtless they would be pleased to do so. Our fruits, if shipped, would reach there at a time when the colonists have no fruit of their own, and they would readily purchase the consignments. The railways of the different colonies run from all the principal ports to the interior, and reach about 500 stations, most at bush towns, where little or no fruits are grown or otherwise obtainable. An organised export trade could be profitably carried on for six weeks or two months in each year, when our fruits are abundant. Fruits in quantity, properly packed, could be put on board the outgoing vessels at Tilbury Docks from the Medway at from 7s. 6d. to 10s. per ton. Fruits shipped in refrigerators can be insured against all risks—and therefore can be dealt with upon the ordinary commercial basis—that enables financial arrangements to be completed and carried out in connection with shipping documents.

EVAPORATED AND DRIED FRUITS.

Dried fruits are those from which the moisture has been extracted by exposure to the sun, are well known in our markets, and have been largely imported for a very long time; these include raisins, Currants, Figs, Prunes, Plums, Normandy Pippins, French Pears, American Apples, &c. The drying of fruits has not been attempted in England on a commercial scale, but frequently fruits have been allowed to remain and dry on the trees, owing to their value as at present dealt with being insuffi-

cient to pay for picking, packing, and transport; in this the county of Kent is not singular. Evaporated fruits are the product of a system of drying by means of currents of hot air—the practice has been brought into active operation in Canada and America within the past few years for the purpose of utilising crops there, and has proved to be very profitable to carry out. The process is an exceedingly simple one, and is readily applicable to all classes of fruits, from the soft Raspberry and Strawberry to the hardest kind of winter Apples. In practice the Apples are pared, cored, and sliced or quartered by a small hand machine worked by a boy or girl; they are then spread on wooden trays or shelves and placed in a close oven or chambers to which hot air is supplied from a stove or steam coil. Apricots, Peaches, Cherries, and similar fruits are dealt with in the same manner; they are subjected to a current of dry hot air in the chamber for about three hours, during which time they are deprived of the whole of their moisture, are altered in appearance, and become considerably reduced in weight. They can be easily packed, and will keep in good order and condition for an indefinite time. When required for use they simply have to be steeped in water and cooked in the ordinary way, when they will assume their original dimensions and also be found to have retained the flavour they possessed upon being subjected to the process—that is to say, that if evaporated at the orchards immediately on being plucked they will retain all the natural aroma and flavour of fresh plucked fruits, whereas, if they are dealt with after being plucked and marketed, involving a delay of several days during which they will have lost their flavour, then they will only have the flavour they possessed at the time of preparation and no more. It must not therefore be thought that stale fruit can be evaporated and will become fresh in the process, or that unsound fruits will become sound by the same means. This points out the advantages derivable from treating the fruits on the spot in proximity to the orchards where grown. The county of Kent possesses great advantages for profitably working the system of fruit evaporation owing to the large number of oast-houses that exist in every direction that could be readily converted and utilised as evaporators, and thus profitably employed in seasons when they now remain unoccupied. The improvements made to the oast-houses to enable them to be used for fruits would be of material benefit when they were required for Hop-drying. The temperature maintained in the evaporators for fruit-drying ranges from 180° to 240° Fahr., and the time occupied in drying is from two and a half to three hours, varying with the fruits, some of which contain more water than others. Green Apples weigh about 55 lbs. to the bushel, after being pared and cored the net residue weighs about 35 lbs., which quantity, after evaporation, weighs from 6 to 7 lbs. A bushel of green Apples in America or Canada is worth about 7d. to 9d.; the wholesale value of the evaporated fruit there is from 6d. to 7d. per pound, say from 3s. to 3s. 6d.; the cost of labour, fuel, &c., is about 10d. the bushel, therefore by evaporating their fruit the growers of America and Canada more than treble their value, besides obtaining a residue of 20 lbs. of paring and coreings which has a good value as a food for stock, in which form it is much appreciated. Pears turn out about 7 to 8 lbs. to the bushel, and Plums about 12 to 13 lbs.; all other fruits show comparatively similar advantageous and profitable results. In addition to its possession of the oast-houses, the county of Kent furnishes peculiar facilities for the successful introduction and practice of the system of fruit preservation by evaporation on the following grounds:—It has a large quantity of soft and hard fruits that give a long range of season for working. It has a quick communication with the metropolis, to which regular supplies of its choice fruit can be speedily forwarded as selected from the bulk. The large capacity of the oast-houses, in the centre of the fruit-producing district will, by appropriating a vast amount of fruit that has hitherto been forced on the market, make room for the produce of many more orchards than at present exist, and at the same time enable better prices to be obtained for what is disposed of.

CANNING OF FRUITS.

The canning or tinning of fruits is largely carried on in America, at Bermuda, and at Singapore, also to some extent in Australia. Fruits preserved in this form are dealt with in two ways; the first in their own juice, when they are intended for cooking purposes; by the second they are prepared in syrups of different strengths, and are then available as dessert fruits. In the New England States and in Maryland vegetables are also largely preserved, and form a valuable addition to the larders of all American homes. In the State of California dessert fruits are canned and shipped in very large quantities to all parts of the world. It will not be difficult to obtain Californian fruits of every description at any of the leading grocers of Sittingbourne. The cost and charges of tins and cases form a large proportion of the cost of canning, and this system, except for the fruit in syrup, is being superseded by the more economical method of evaporation, as that is found to need but little additional capital from the farmer over the cost of the fruit.

The boiling of fruits in syrups is carried on very extensively in Portugal and in France, and goods made up in that form command very high prices and meet with considerable sale in the West End of London, where they are in demand at seasons of the year when other fruits are not procurable. A considerable quantity of fruits are bottled by our London and some country manufacturers, but, with that peculiar characteristic that applies to the distribution of our food products, English bottled fruits are invariably made up in their own juices, and suitable only for cooking purposes. Compared to the manufactures of other nations, they have a low commercial value, and only enter into consumption where other goods are not obtainable. These are sad facts to realise in a country whose people pride themselves upon their commercial experience, enterprise, and energy.

The crystallising of fruits by boiling them in sugar that they may be available as a sweetmeat, or for dessert purposes, is very largely carried on in France, whose goods are extensively imported and readily sold in every direction with us at comparatively high prices. This particular branch of fruit preservation is divided into several branches, each having special characteristics, such as crystallising, glacing, candying, &c., &c. The basis of all, however, is much of the same character, and does not require either extensive plant or other appliances; skilled labour is the principal element necessary to produce these goods and pack them for sale. The candying of Lemon and Orange peel is the principal branch of this industry that is carried on in this country.

(To be continued.)

ORCHIDS

SARCOCHILUS HARTMANNI.

Several species of Sarcochilus have been noted various times, especially at Kew, where they are well grown and frequently attract attention as amongst some of the most distinct and pretty Australian Orchids. In the "Botanical Magazine" for August an excellent illustration of the species named above is given, together with the following remarks by Sir Joseph Hooker. Being of free growth, flowering readily, and lasting well, this and other species of Sarcochilus are not likely to remain long scarce in amateurs' collections of Orchids. "This appears to be very near indeed to S. Fitzgeraldi, *F. Muell.*; but, as Mr. Fitzgerald points out, the habit is erect, and the very stout peduncles and racemes at once distinguish it. It is a native of mountain woods near Towomba, and at Cairns in Queensland, where it was discovered by Mr. E. Ramsay, F.L.S. Our plant was received from Mr. J. F. Roberts, nurseryman of Kew, near Melbourne, in 1883, and it flowers annually in the cool Orchid house in the early spring.

"Stems loosely tufted, short, stout, with very long strong aërial roots. Leaves three to five, 2 to 5 inches long, hard and fleshy, linear-oblong, tip obtuse or equally or unequally obtusely two-toothed, channelled down the middle, keeled at the back, light green. Peduncle as thick as a goose-quill, as long as or longer than the leaves, sub-erect, with a few distant fleshy ovate green bracts; raceme 4 to 5 inches long, laxly many-flowered; braets small, triangular, persistent; pedicels a quarter of an inch and short ovary and base of perianth externally speckled with red. Perianth three-quarters of an inch in diameter, sepals and petals sub-similar, spreading, oblong, obtuse, pure white with a few red specks or bars at the base. Lip very small, saccate; fleshy, lateral lobes falcately oblong, obtuse, erect; intermediate very short, conical, obtuse; disk with a fleshy two-lobed callus."

ORCHIDS IN UNHEATED HOUSES.

It is often advised, and rightly, that it is unwise to attempt growing Orchids in greenhouses, but this, of course, refers to houses where hardwooded plants, such as Heaths, &c., are grown, which need an abundant supply of air at all seasons. During the summer however, many Orchids can be satisfactorily grown in unheated houses, and they can be kept healthy during the winter if the temperature can be prevented falling below 40°, or preferably 45°. I have a small house the roof of which is covered with a Black Hamburgh Vine, while on the stages I grow a number of Ferns with a few flowering plants, and amongst the latter are some Orchids, a few of which have flowered exeellently this summer. No heat is employed during the summer months, and though our Grapes are late they both colour and ripen well, the foliage affording just as much shade as the Orchids and Ferns require. The best of the Orchids is Odontoglossum Rossi, which has even recovered from a rather severe freezing, and flowers each season abundantly, lasting for several weeks. O. Cervantesi is not quite so happy, but that also has flowered well this season. O. crispum I have in several varieties, and it is thoroughly at home, but not quite so hardy as the preceding. As an experiment I tried O. vexillarium, but though it still appears healthy the flowers will not develope, and it will have to be discarded in favour of the others. My most useful and long-lasting Orchid has been Epidendrum vitellinum, the rich colour of which afforded a fine contrast with the Odontoglossums. Masdevallias of the Lindeni and Harryana types grow and flower freely, and with the aid of a few Adiantums we have been able to make up several rather effective little groups.—H. H. M.

VEGETABLES FOR EXHIBITION.

I HAVE read your correspondent's notes under this head (page 66), and upon the whole been much interested in them; but there is one point that I take a decided exception to—namely, in reference to Globe Artichokes. I fail to see the qualifications of this to take at any time a full number of points of any one kind of vegetable. I know it is a favourite with some exhibitors, but I fail to see the merits in any particular. I should class it amongst oddities—place it in the same position in a collection as it usually is in the garden—that is, where Horseradish, Rhubarb, &c. is in the roughest part of the garden. Neither is the Artichoke a popular vegetable, so that at any time I should place many kinds before it. Indeed, I hardly think it equal to a dish of tender and good young Cabbage. Of course, my opinion may be out of the usual fixed course, still I should be interested a little further to see the opinions of a few growers on this point. There is no difficulty in growing an Artichoke. How many per cent. care for it after it is grown? Would not your correspondent himself prefer good Cabbages to it any day?

One vegetable he makes no mention of which is a most deserving one popularly—the Leek. It will stand the severest winter, and is most wholesome if properly used. Certainly it can scarcely be called a summer vegetable, but good early ones might be put on a par nearly with Celery in August. The tastes of judges it is well known vary greatly, and the Artichoke, it seems to me, is one of so little consequence that they are seldom asked for, and I should be inclined to dispute your correspondent's opinion, in a friendly way, on the point.—AN OCCASIONAL EXHIBITOR.

LIVERPOOL SHOW.

THE Liverpool Horticultural Society's Exhibition was held, as usual, in Sefton Park, on Saturday, August 4th, and Monday, the 6th, and, on the whole, was equal to those of previous years. The large tent devoted to stove and greenhouse plants has, perhaps, never been better filled, nor have exhibits been so nearly equal in so many instances. The Show was a brilliant success, but financially it was probably a complete failure, as rain fell before the judging was completed, and continued the remainder of the day. The tents in consequence were practically deserted. This is to be regretted after the heavy losses of last year, the signal failure of the spring show, and just when the Society anticipated widening its base of operations.

STOVE AND GREENHOUSE PLANTS.—In the class for twelve plants, six flowering and six foliage, three collections were staged, and the competition between Mr. J. Cypher, Cheltenham, and Mr. Roberts, gardener to A. Nicholson, Esq., Highfield House, Leek, Staffs, was remarkably close, the former gaining the premier position by one or two points. Mr. W. Finch, gardener to J. Marriott, Esq., Queen's Road, Coventry, was third. The first collection contained Kentia australis, Kentia Fosteriana, Crotons Victoria and C. angustifolius, good; Cycas revoluta, Latania borbonica, Erica depressa, 4 feet through, and a mass of bloom; Erica Marnockiana, Statice profusa, Allamanda nobilis, Kalosanthes coccinea, and a good Phænocoma prolifera. The second contained magnificent plants of Kentia australis, Cycas circinalis, Encephalartos villosus, Ixora Williamsi, 5 feet through and full of flower, and a large profusely flowered Dipladenia amabilis. In the corresponding class for eight plants Mr. B. Cromwell, gardener to T. S. Tinnis, Esq., Cloveley, Allerton, was well first with grand plants, amongst them being Croton Disraeli, 5 to 6 feet through and a good colour; Croton Queen Victoria, considerably larger than the last and superbly coloured, being by far the finest Croton in the Exhibition. A good plant of Gleichenia dichotoma, 5 feet in diameter, and Ixora Pilgrimi were also conspicuous. Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, followed, having a fine Phænocoma and Ixora coccinea, Mr. Finch being third for creditable plants. Mr. A. Crosbie, gardener to B. Hall, Esq., Dudlow House, Wavertree, was awarded an extra third. For six plants in bloom Mr. Cypher took the lead with Ixora Williamsi, Allamanda nobilis, Erica Thompsoni, E. retorta major, Kalosanthes coccinea, and Statice profusa. Mr. Roberts was a close second, and had good plants of Ixora Pilgrimi, Erica Jubeana, and Dipladenia Brearleyana. Mr. W. Finch was third with much smaller examples. In the corresponding class for four plants Mr. B. Cromwell was first with neat well grown examples. Mr. A. R. Cox second, and Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Woolton, third. For one stove plant in flower Mr. Roberts was first with Dipladenia splendens, Messrs. W. Finch and A. Crosbie being second and third, the former showing Sobralia macrantha, and the latter Eucharis amazonica. For one greenhouse plant in flower Mr. J. Cropper, gardener to H. A. Vlasto, Esq., took the lead with Hydrangea hortensis, 7 feet through. Mr. Gowen, Mossley Hill, second with a fair Kalosanthes, but past its best.

FINE-FOLIAGE PLANTS.—These were shown in about the usual style and numbers. For eight plants Mr. J. Jellico gained the highest award with grand examples of Pritchardia pacifica, Dion edule, Dicksonia antarctica, Thunia elegans, Latania borbonica, Croton Warreni, Croton Countess, and Goniophlebium subauriculatum. Mr. Cpyher was second, and Mr. Finch third. For six plants Mr. B. Cromwell was well first with healthy moderate sized specimens of Gleichenia Mendelli, Anthurium crystallinum, Kentia Fosteriana, Croton aureo-marmoratus, and Phœnix rupicola. Mr. A. R. Cox secured the second place, and had in his collection Kentia Fosteriana and Croton angustifolius good. Palms need no special comment. The prizewinners for three plants were Messrs. A. Crosbie, Thos. Jones, and C. Roberts; for one plant Messrs. C. Roberts and A. Crosbie.

Ericas were not numerous, and those staged were below the average. Mr. Cypher was first with fair plants, Mr. A. R. Cox second, and Mr. Roberts third with small examples.

FERNS.—Particularly good were the Ferns, especially exotic varieties, while hardy varieties were scarcely up to the mark. For eight exotic varieties, distinct, Mr. Thos. Gowan was first with a splendid lot of plants that would average nearly 4 feet through them, and in the best possible condition. Gymnogramma argyrophylla, Adiantum Lindeni, Davallia scaberula, Davallia Mooreana, and Goniophlebium subauriculatum were conspicuous. Mr. B. Cromwell was a good second, having splendid examples of Davallia tenuifolia Veitchiana, D. fijiensis both very fine, and Nephrolepis davallioides furcans. Mr. A. R. Cox secured the last award. For four plants, six or seven collections were staged. Mr. J. Hughes, gardener to D. Melver, Esq., Elmwood, Woolton, Mr. Thos. Jones, gardener to W. Clark, Esq., Aigburth Drive, and Mr. J. Hurst were the winners in the order named. For six Selaginellas Mr. Harrison, gardener to Mrs. G. Bateson, New Heys, was first with capital well grown plants. For two Filmy Ferns Mr. J. Foster took the lead with two fine Todeas, followed by Mr. J. Jenkins, gardener to J. E. Tinnie, Esq., Mersey Road, and Mr. W. Finch. For six hardy varieties Mr. J. Foster, gardener to J. Brancher, Esq., was first, and Mr. P. Barber, gardener to A. Barnsley, Esq., second.

Begonias were far behind those staged a few years ago, and except the exhibits from Mr. Cox they could only have been termed the poorest of examples. His plants were young, but strong and well flowered. For six plants the competitor named was first, followed by Mr. A. Crosbie and Mr. B. Cromwell. For three, the same exhibitor was again first, the last second, and Mr. James Hurst third. For one plant Mr. A. R. Cox was again first.

Caladiums were good, and for six plants Mr. J. Warrington, gardener to J. Bright, Esq., was first, followed by Mr. J. Harrison. Achimenes, Petunias, and Fuchsias need no special comment. Coleuses were good, but too formal. Mr. Gowan was placed first, Mr. Bustard second, and Mr. T. Jones third. Cockscombs were good, and Mr. A. Agnew gained the chief honours, and Mr. R. Johnson, gardener to Mrs. White, Derwent Lodge, Wavertree, was first for Gloxinias, which were superb. Mr. T. Winkworth was second, and Mr. Agnew third.

GROUPS.—Only four were staged for the six awards offered. In the open class for a group of miscellaneous plants not to exceed 250 square feet, Messrs. R. P. Ker & Sons was the only exhibitor, and the arrangement was in their usual light and effective style, for which the first prize was awarded. In the corresponding class for one not to exceed 150 square feet there were three competitors, and Mr. A. R. Cox was successful with a neat telling arrangement of clean choice plants. Mr. J. Jellico was an excellent second, and at a first glance the most pleasing of the two, but upon close inspection the Judges' decision was found to be right. Mr. T. Jones was third with a heavier group that lacked lightness and colour. Zonal Pelargoniums were on the whole good. For six single varieties Mr. Gowan took the lead; for three Mr. D. McKellar was first; for four double Mr. Gowan occupied the same position, and Mr. J. Stoney for six Ivy-leaf varieties which were well done.

ORCHIDS.—The plants contributed for the six prizes offered for these plants were highly creditable to the unsuccessful competitors as well as those that gained the prizes. The competition was very keen, and the plants in every instance healthy and well flowered. For four plants Mr. J. Cypher took the lead with Cattleya crispa having six fine spikes; C. Gaskelliana pallida was equally good with the same number of spikes. Saccolabium Blumei was striking with three spikes, while Cypripedium caudatum had two fine flowers. H. Tate, Esq. (gardener, Mr. J. Edwards), was second, and had a fine dark variety of Odontoglossum Harryanum with three spikes. Third, Mr. R. Johnson, gardener to Thos. Slatters, Esq. For one plant Mr. W. Tunnington was well first with Oncidium Lanceanum; Mr. J. Edward second with Odontoglossum Harryanum, having a fine spike of ten flowers; third, Mr. R. Johnson for Miltonia spectabilis having twenty flowers.

Table plants as usual were light and of a very suitable size for that purpose. For six plants Mr. C. Evans, gardener to Willwood Maxwell, Esq., Holmfield, Aigburth, was first with Pandanus Veitchi, Dracæna gracilis, Croton aigburthensis, Croton Chelsoni, Dracæna albo-marginata, and an Aralia. Mr. J. Agnew was second, and Mr. J. Bounds third, both showing well. There was a large number of entries in this class.

CUT FLOWERS.—The prizes for these were well contested, especially those offered for stove and greenhouse varieties, but the display of Roses did not quite equal expectations, for they were not of such good quality as we have seen them at this Show. Of forty-eight Roses, distinct blooms, no less than six collections were staged, and the first and second were very close. Messrs. Harkness & Sons, Bedale, secured the premier position with fresh and bright, but rather smaller blooms than those which gained the second award. The names of the whole of the varieties in this collection have been given several times this season, that they need not be repeated here. Messrs. A. Dickson & Sons, Newtonards, and Messrs. R. Mack & Sons were second and third winners. For eighteen blooms of Teas, Hybrid Teas, and Noisettes, three collections were staged; the same exhibitor was again successful, and had good Souvenir d'un Ami, The Bride, Rubens, Madame Caroline Kuster, Madame Willermoz, Lady Mary Fitzwilliam, Francisca Kruger, David Pradel, Alba Rosea, Catherine Mermet, Niphetos, Madame Cusin.

Princess of Wales, Souvenir de Paul Neyron, Grace Darling, Innocente Pirola, Souvenir d'Elise, and Madame de Watteville. Mr. J. B. Hall, Larkwood, Rock Ferry, was a good second, and Messrs. R. Mack third. For twenty-four blooms three collections were again exhibited. Mr. T. B. Hall secured first honours with a capital lot; Mr. H. Pewtress, gardener to A. Tate, Esq., second, and E. H. Stoll, Esq., The Lindens, Fulwood, Preston, the remaining prize. For twelve blooms the same competitor was again to the fore amongst seven exhibitors. T. Raffles Balley, Esq., Breck Hey, Liscard, second, and Mr. W. Hall, St. George's Mount, New Brighton, third, all showing well. Eight boxes were staged for twelve blooms of any dark variety. Messrs. Harkness and Sons took the lead with superb examples of Ulrich Brunner, followed by Messrs. A. Dickson & Sons with Marie Baumann, and Messrs. R. Mack & Sons third with the same variety as shown in the first collection. For twelve blooms of any light kind no less than nine competitors competed for the three prizes offered. Messrs. A. Dickson & Sons was well first with magnificent blooms of Her Majesty; Messrs. Harkness and Sons second with Merveille de Lyon, and Messrs. R. Mack & Sons third with La France, very neat. For the most tastefully arranged box of Roses, not less than twelve varieties, Mr. T. B. Hall was first with a very effective arrangement of dark and light blooms, which contrasted admirably with the groundwork of Adiautum cuneatum. Second, A. Tate, Esq., very neatly arranged, but the intermediate coloured flowers rendered the contrast less effective than was the case in the preceding exhibit. The remaining exhibit needs no special note, for the blooms were poor and crowded together.

Stove and greenhouse cut flowers were probably never shown in larger numbers or in more excellent condition; they were one of the most attractive features of the Exhibition. For eighteen varieties four collections were staged. Mr. J. Cragg, gardener to A. Heine, Esq., Birchfield, Fallowfield, Manchester, was well first with large bunches of Odontoglossum Lindleyanum, Cattleya crispa, C. velutina, C. Gaskelliana, Allamandas, red and white Lapagerias, Ixora, Dipladenia, Eucharis, Stephanotis, and Bougainvillea. Mr. P. Blair was a good second, and had very fine Odontoglossum Alexandræ, O. Pescatorei, Cypripedium bellatulum, Oncidium macranthum, Disa grandiflora, Dendrochilum filiforme, Epidendrum vitellinum, and Masdevallia Harryana. Mr. B. Cromwell was third, and had splendid spikes of Stanhopea insignis. In the corresponding class for twelve varieties Mr. J. Bound took the lead, followed by Mr. G. Jenkins and Mr. Hurst. Five collections were staged. Hardy herbaceous cut flowers were much the same as in previous years. For twenty-four varieties Mr. W. Bustard was first with an imposing collection, Mr. J. Watson was a good second, and Mr J. Warrington, gardener to T. Bright, Esq., third. For twelve varieties no less than eleven exhibitors staged, and the winners were Messrs. J. Foster, D. McKellar, and P. Barber. For eighteen Carnations Mr. R. Brownbill, Ravenswood, Rock Ferry, took the lead with capital blooms. For twelve double Dahlias Messrs. A. Dickson and Sons secured the chief position with excellent blooms. For twelve bunches of single varieties Mr. J. Jellico was placed first.

Bouquets.—The schedule only provided two classes for these, but the competition was good in both. The exhibits throughout were highly praiseworthy and far above the average; in fact, better have not been seen at any of the previous exhibitions held by the Society. For two bouquets in the open class Messrs. Perkins were well placed first with splendid examples, Mr. Cragg was an excellent second, and Mr. Geo. Cashel of the Liverpool Horticultural Society a good third. Orchid blooms were liberally used, and Pancratiums rendered the first two really charming. In the corresponding class Mr. Cragg was first, Mr. Blair second, and Mr. Todd, High Street, Woolton, third. For one vase or epergne for table decoration Mr. Cragg was easily first with a light arrangement.

FRUIT.—In a few instances the examples staged excelled those exhibited at any previous exhibition held by the Society. On the whole the exhibits were a little below the average of past years, but when the unfavourable season is taken into account the display was an excellent one. In the class for eight dishes, distinct kinds, not more than two varieties of Grapes, Mr. R. Dawes, gardener to the Hon. Mrs. Ingram, Leeds, was accorded the premier position with very good Madresfield Court and Muscat of Alexandria Grapes, a fair Queen Pine, Reading Hero Melon, Royal George Peaches, Lord Napier Nectarines, and remarkably fine Brown Turkey Figs. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, was a good second, having fine Elruge Nectarines and Bellegarde Peaches. The Grapes were good in bunch and berry, but the Black Hamburghs were rather short of colour, and the Muscat of Alexandria scarcely ripe. Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood Lodge, Notts, was third, having good Black Hamburgh Grapes and Duke of Edinburgh Strawberries. In the corresponding class for six dishes, Pines excluded, Mr. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Liverpool, was first with Madresfield Court and Muscat of Alexandria Grapes, the former being really fine in every respect, very large and highly coloured Bellegarde Peaches, Elruge Nectarines, and a good Melon, La Favourite, the weakest dish being Strawberry President. Mr. D. Lindsay, gardener to Sir T. E. Moss, Bart., Otterspool, was second, and had fine Muscat of Alexandria Grapes and Bellegarde Peaches. Third, Mr. J. Stoney, gardener to Sir Thomas Earle, Bart., Allerton Towers, Liverpool.

Pines were better than they have been for the past two or three years, and were staged in greater numbers. For two fruits, Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, was first with good Queens; Mr. G. Walton, gardener to F. H. Sykes, Esq., Cringle House, Cheadle, second; and Mr. W. Tunnington, gardener to Mrs. McIver, Calderstone, third. For one fruit, Mr. P. Blair was again first with the same variety as in the preceding class; Mr. J. Bennett, gardener to the Hon. C. H. Wynne, second; and Mr. Elsworthy third.

Grapes were not quite so good or shown in such large numbers as previously, although the successful competitors staged wonderful examples of Black Hamburgh and Buckland Sweetwater. In the class for four bunches, distinct, Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, St. Helens, was deservedly first with good Muscat of Alexandria, Black Hamburgh, Buckland Sweetwater, fine, and Madresfield Court, rather short of colour. Mr. J. Stevenson, gardener to W. W. Pilkington, Esq., The Hazels, Roby, was a good second, having very fine Black Hamburghs and Madresfield Court. Mr. T. Elsworthy secured the remaining award, the bunch of Buckland Sweetwater in this collection being remarkably fine in both size of bunch, berry, and colour; four collections were staged. For two bunches of Black Hamburgh Mr. J. Stevenson was well ahead with perfectly finished examples. Mr. P. Barker, gardener to G. Raynes, Esq., Rock Ferry, followed with larger bunches, but scarcely so even, and they lacked colour slightly towards the points. Mr. R. Brownbill was the other successful competitor with good-sized bunches with large berries, but rather short of colour; eight collections were staged for the three prizes offered. For two bunches of Muscat of Alexandria there were five or six entries staged; Mr. G. Middleton took the lead with finely finished examples; being good in bunch and berry; Mr. J. Stoney was second with good bunches and the largest berries of any exhibited, but the bloom was very much damaged. Mr. W. Pratt was placed third with creditable examples scarcely ripe. For two bunches of black Grapes Mr. J. Bennett took the lead with Alnwick Seedling, large bunches superbly finished, but the berries were small. Mr. J. Stevenson was second with Madresfield Court, large bunches and berries of an enormous size, but short of colour. Mr. W. Wilson, gardener to H. Cunningham, Esq., was also successful with the same kind; five exhibitors staged in this class. For two bunches of white Grapes Mr. J. Bennett was again to the fore with grand Buckland Sweetwater; Mr. W. Oldham, gardener to J. Beecham, Esq., second with Duke of Edinburgh, scarcely ripe, but in other respects very fine; third, Mr. T. Elsworthy with the same kind as staged by the first-named exhibitor. Several of the exhibits of the remaining five competitors were also good.

Peaches.—A few dishes were above the average, but on the whole they were below both in quality and numbers. Only ten dishes were staged in the two classes devoted to this fruit. Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, took the lead with very fine Royal George, followed by Mr. J. Bennett, showing the same kind; and Mr. Dilworth, gardener to W. G. Holland, Esq., Liscard Vale, with good Bellegarde, but short of colour. In the corresponding class Mr. T. Elsworthy was first with Bellegarde shown in his usual style, Mr. J. Stoney second with Grosse Mignonne, and Mr. D. Lindsay third with the same kind as secured for the first prize. Only some twelve dishes of Nectarines were staged for the six prizes offered. Mr. J. Bennett took the lead with Pine Apple, followed by Mr. P. Blair with the same; while Mr. Eaton, gardener to J. Pilkington, Esq., Roby, was third with rather small fruit. Mr. T. Elsworthy was first in the corresponding class with large highly coloured fruits of Elruge; Mr. J. Hurst, gardener to W. B. Bowring, Esq., Beechwood, Aigburth, second with Pine Apple, and Mr. J. Barker third with the same.

Melons were above the average both in appearance and quality. Some seventeen fruits were staged in the two classes devoted to them. For one green-flesh Mr. W. H. Divers was first with a well-netted, handsome fruit of Ketton Gem that was pronounced to be of excellent flavour, as may be gathered from the fact that it beat Dickson's Exquisite, staged by Mr. J. Barker, and which gained the second award. Mr. Pratt was third with Longleat Perfection. For one scarlet-flesh Mr. R. Dawes secured the premier position with Scarlet Hybrid, Mr. G. Lyon, gardener to J. H. Kenion, Esq., Rock Ferry, second with Scarlet Premier, Mr. T. Moorhouse, gardener to B. Brocklehurst, Esq., Sandsfield Park, West Derby, third.

Hardy Fruits.—Considering the season these were good. For one dish of Strawberries five exhibitors entered. Mr. R. Dawes was first with large fruits of President, Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, second with the same kind, and Mr. T. Winkworth third with Myatt's Prolific. For one dish of Cherries Mr. W. H. Divers was first with Bigarreau, Mr. R. Dawes second with Elton, and Mr. Lambert third. Nine dishes were staged. For a collection of six dishes, distinct, Mr. Hannagan, gardener to R. C. Naylor, Esq., Horlton Hall, was first with good dishes of Raspberries, Red Currants, Cherries, Strawberries, and Black Currants; second Mr. Ed. Gregg, Arrowbank, Birkenhead; and third, Mr. J. Stoney. For a basket of fruit tastefully arranged only three competitors exhibited. Mr. J. Stoney took the lead with the most tastefully arranged collection, Mr. T. Elsworthy was second with finer fruit but less tastefully arranged, and Mr. P. Blair third with a collection in a tray or box.

VEGETABLES.—These throughout were excellent, and the competition in every class was most spirited. Four collections were staged in the open class for twelve distinct kinds, and Mr. J. Lambert was well first with a grand lot, having very good Sulham Prize Celery, Snowball Turnips, Autumn Giant Cauliflower, Lyon Leeks, Globe Artichokes Paragon Beet, Seville Longpod Beans, Cucumber Telegraph, Tomatoes, Prodigy Peas, Intermediate Carrots, and Chancellor Potatoes. Mr. J. Stoney was a good second, and Mr. H. Forder (gardener to Col. Cornwallis West, M.P., Ruthin Castle), third. In the corresponding class for

the same number of dishes, Mr. A. R. Cox was first; Mr. J. Stoney an excellent second; and Mr. J. Littlemore, 173, Welling Road, Aintree, third, five collections being staged. For six dishes, prizes given by Messrs. Sutton & Sons, Reading, Mr. J. Lambert was first, and staged Sutton's Seedling Potato good, New Red Intermediate Carrot, and Mainerop Marrowfat Pea. Second Mr. Stoney, good Sutton's Prizetaker Leeks, Tomatoes Perfection, the Carrot named above, and Prizetaker Potatoes. Third, Mr. J. Walton, gardener to F. Tobin, Esq., Old Hall. For six dishes of Peas Mr. J. Stevenson was first with Duke of Albany, Duke of Connaught, Telephone, the Duchess, Stratagem, and Telegraph. Second and third, Messrs. T. Winkworth and J. Lambert in the order named. For three dishes the winners were Mr. W. E. Owen (gardener to Sir Rd. Sutton, Combermere Abbey, Salop), Mr. W. H. Divers, and Mr. W. Hasker, Bromborough Pool, respectively. For two dishes Mr. P. Blair took the lead. Potatoes were excellent. For six dishes Mr. J. Lambert staged decidedly the finest examples, but at the time of taking our report no first had been awarded, owing to the Judges thinking that two of the dishes staged for round varieties were not so. Sutton's Seedling being one and Chiswick Favourite the other, but a long variety were staged for the latter. Mr. H. Forder was placed second with International Kidney, Veitch's Perfection, Snowdrop, Vicar of Laleham, Sutton's Thirty-six, and Adirondack. Third, Mr. T. Winkworth. Six collections were staged. For four dishes five collections were staged. Mr. J. Lyon, Fir Grove Cottage, Whiston, was first with The Dean, International Kidney, Snowdrop, and Early Regent; Mr. B. Cromwell second, and Mr. W. Hasker third. For two dishes, Mr. J. Bennett took the lead, followed by Mr. W. Bustard and Mr. E. Gregg. For three dishes of Tomatoes some splendid dishes were staged amongst the four collections. Mr. G. Lyon was first with grand Hackwood Park, Trophy, and Harefield Golden Gem. Second, Mr. W. Ireland, Prospect Vale, Wallesley; and third Mr. W. Morris, gardener to H. Tyrer, Esq., Aintree. For one dish Mr. R. Dawes took the lead with Jubilee; Mr. W. Ireland followed with Perfection, and Mr. J. Edmonds third. Eight brace of Cucumbers were staged. Mr. J. Stevenson was first with grand fruits of Prescot Wonder, Mr. W. E. Owen and Mr. J. Elsworthy second and third in the order named.

Tomatoes in pots were not so good as they were last year, although they were creditable for the season. Mr. J. Stoney was again successful this year, and although confined this season to one plant in a pot he had allowed his to form three leads from just above the surface of the soil. Mr. J. Jenkens was second, and Mr. J. Fell, gardener to Mrs. J. Campbell, Mersey Road, third.

Miscellaneous Exhibits. — These were numerous. Messrs. W. & J. Birkenhead, Sale, Manchester, contributed two groups of hardy and exotic Ferns, young clean healthy plants. Messrs. R. P. Ker and Sons, Aigburth Nursery, an excellent table of stove foliage plants and Ferns, which included highly coloured Crotons and most of the noteworthy plants of recent introduction. Conspicuous was Dracæna lineata variegata, or as it is named, Droucetti, a narrow-leafed variety with a white margin; Croton Aigburth Gem, a hybrid between C. Neumanni and Rodeckianus, for which a first-class certificate was awarded. This variety has narrow leaves and much of the character of the last named parent, with some of the rich colouring of Neumanni, which was also raised by Mr. Ranger in the Aigburth Nurseries. Messrs. Dicksons, Limited, Chester, contributed a very handsome collection of similar plants, amongst them Begonias were freely intermixed. The Liverpool Horticultural Company, Garston, had a similar group, and two splendid circular groups of Tea Roses. Messrs. Cannell & Sons, Swanley, sent boxes of double and single Tuberous Begonias, which were very striking, having travelled well; also six plants of Begonia Octavie with its pearly white double flowers, for which a first-class certificate was awarded. Mr. G. Downes, Lodge Lane, sent pans and pots of Ferns suitable for various forms of decoration. Mr. E. G. Reid, 34, Pelham Grove, Sefton Park, exhibited his prize plan for the new public park at Ramsay and others, as well as drawings of Orchid flowers. In October this enterprising landscape gardener anticipates starting a class for gardeners and under gardeners to teach drawing three hours weekly, for the modest sum of 5s. quarterly.

Implements were few in number, Mr. P. B. Harkin, Dulton Street, exhibited samples of Bamboo canes of suitable sizes for all purposes, Orchid baskets, and his ornamental teak tubs. Mr. Jos. Bramham showed his Allerton Priory boiler; Mr. J. Webster, Wavertee, a small span-roofed greenhouse; Messrs. F. & J. Mee boilers, &c.

Never since the Society started have the varied arrangements been better carried out, which is highly creditable to all who have taken an active part in its management. The Society will to some extent be reorganised, we understand, and we hope that the success which it deserves will again attend the exertions of the horticulturists of Liverpool.

SOUTHAMPTON SHOW.

August 4th and 6th.

Another most successful show must be chronicled for the Royal Horticultural Society of Southampton, which was held as usual in the beautiful grounds of the Society in Westwood Park. The Exhibition in question must rank as one of the best yet held by this Society; competition was in all cases most spirited, and the results very satisfactory. The arrangements were similar to other years, the plants and groups occupying two immense tents, which were connected so that a view could be obtained of the whole at once. A separate tent was set apart for table decorations, bouquets, &c., while another very large one was devoted to fruit, cut flowers, and vegetables. The arrangements reflected much credit upon the Committee, of whom Captain Gibbs is Chairman. The indefatigable Secretary, Mr. C. S. Fuidge, was as usual in his place, and therefore the whole went smoothly, as it always does when he is at the helm. The Committee, Judges, and principal exhibitors lunched together in a marquee on the ground, the Mayor (Mr. H. Coles) in the regretable absence of the President, W. H. Myers, Esq., occupied the chair.

Plants. — These were shown in larger numbers than usual, the general good quality being maintained throughout, while the competition was keen. The great class in which the most interest was displayed was for twelve stove or greenhouse specimens, six to be in bloom, and six foliage, distinct, for which the handsome prizes of £18, £15, £12 were offered. Four competitors entered their exhibits, making an imposing display, being staged as they were up one side of the large tent. The premier award was given to Mr. J. Cypher, Cheltenham, by the weight of his flowering plants, although the second prizewinner, Mr. Lock, gardener to W. B. Cleave, Esq., Newcombe House, Crediton, had the best foliage plants, Latania borbonica, not extra large, but perfect; Kentia Fosteriana, very fine; and Croton Queen Victoria, good, were his best foliage specimens. Especially good was Erica Parmenteriana rosea, E. ferruginea major, fresh and freely flowered; Allamanda nobilis, and Kalosanthes coccinea. Mr. Lock had Latania borbonica of huge size, magnificently grown and coloured; Crotons Warreni and Williamsi, the former a perfect fountain of colour; Erica æmula and Stephanotis floribunda, both freely flowered. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was awarded third honours for most creditable plants. For the same number of plants, under the same conditions as to variety, but open to gardeners only, £10, £7, £5, were offered. Here Mr. J. Amy, gardener to the Hon. Mrs. Elliott Yorke, Netley Cliffe, Southampton, succeeded in winning first honours with a capital dozen, including Cycas revoluta, a perfect plant in every way; Latania borbonica, Allamanda Hendersoni, 6 feet in diameter, magnificently flowered; Bougainvillea glabra, and Rhyncospermum, very large. Mr. N. Blandford, gardener to Mrs. Haselfoot, Moorhill, Bitterne, was a good second. Allamanda Hendersoni was grand, Bougainvillea glabra fresh, and a good specimen of Lasiandra macrantha floribunda were his best. Mr. J. Curry, gardener to Lieut.-Col. Pepper, Salisbury, was third. Six stove and greenhouse plants in bloom, distinct, open class, £5 was the first prize, which Mr. Wills succeeded in obtaining. Second Mr. H. James, nurseryman, Norwood. Third Mr. Blandford. For the same number of foliage plants Mr. Lock was first; Crotons Disraeli and Johannis were magnificent in colour. Second Mr. Wills, Phœnix reclinata being the best. Yet another class for nine miscellaneous plants was provided, £6 being the first prize, which fell to Mr. Molyneux, who had excellent specimens of Latania borbonica, Croton Queen Victoria, and a good plant of Trachelium cœruleum. Mr. W. Thompson, gardener to Captain Bolland, Blighmount, Millbrook, was second.

For a miscellaneous group arranged for effect, occupying a space of 120 square feet, Mr. Wills was easily first with a bright lightly arranged group, the foliage and flowering plants being evenly balanced. Graceful Palms were at the back, while a base of Maidenhair Ferns occupied the middle and front, from which rose Draecænas, Crotons, Orchids, Heaths, Celosias, Hydrangeas, and Gloxinias. Mr. J. James was second, his group showing too much green foliage and not enough of colour. Mr. J. Amy was third. For a collection of Orchids there was only one entry, but this produced a capital effect at one end of the tent. Not large but healthy plants were they, coming from Mr. T. Osborne, gardener to J. J. Buchan, Esq., Southampton, the most noteworthy plants being Cypripedium bellatulum, Oncidium Lanceanum, O. Jonesianum quite happy-looking growing on a tile, Cœlogyne Massangeanum, Cattleya Dowiana, Cypripedium Veitchi, and Cattleya Schofieldiana. Mr. Osborne was also first for a single specimen Orchid with Dendrobium Deari, three spikes. Mr. Wills second with Calanthe veratrifolia. For six specimen Crotons, distinct, Mr. Lock was easily first with plants all well coloured. Mr. Wills second with a poor lot. Begonias, single and double, were well shown, Mr. Blandford being first in the former class, while Mr. G. Bushby was first for the latter, as he was also with four Zonal or Nosegay Pelargoniums, six Coleus with beautiful pyramids, four Fuchsias, and for six Selaginellas. Messrs. Oakley & Watling, nurserymen, Bevois Mount, Southampton, staged the best miscellaneous collection of nursery stock; second Mrs. Kingsbury, Bevois Mount, Southampton. Mr. Osborne had the best six Achimenes; for six Fuchsias, and single specimen also, freely flowered they were and 7 feet high; six Cockscombs: for one specimen plant in flower with Cypripedium Sedeni with twenty spikes; and for six Gloxinias, stout and erect were the flowers. With a capital plant of Croton Chelsoni Mr. Lock took first prize for a single specimen foliage plant, and for six hardy Ferns; while the first honours for six exotic Ferns fell to Mr. Wills with healthy large plants of Davallia Mooreana, Microlepia hirta cristata, Nephrolepis davallioides furcans, and Davallia polyantha. Mr. J. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, had the best Celosias, naturally trained freely flowered specimens. In a brisk competition for six table plants Mr. Molyneux led the way with even neat suitable plants; Messrs. Wills, C. J. Waite, and Amy following in the order named. Amateurs' groups, vegetables, and cut flowers were capital.

Fruit.—Although not so abundant as in some past years, the general quality was good throughout, the competition being keen. The white Grapes, as is generally the case this season, showed a want of colour; black Grapes in some instances indicated the effects of the

recent bad weather, although some were very fine. There was a good show of Melons, but in a few instances only were they of high flavour. Peaches and Nectarines were good, being highly coloured, if not large. Hardy fruits were well shown. For six dishes of fruit, the varieties to be distinct (Pines excluded), four prizes were offered, the handsome sum of five guineas being the first, which brought five competitors. Mr. H. W. Ward, gardener to the Right Hon. Earl of Radnor, Longford Castle, Salisbury, was easily first—Muscat of Alexandria, shapely bunches with good berries and good colour; Black Hamburgh, medium sized bunches of good colour; fine Hero of Lockinge Melon; large Goshawk Peaches; rather green Pine Apple Nectarines and Brown Turkey Figs were his dishes. Mr. W. Allen, gardener to Sir G. Russell, Bart., M.P., Swallowfield Park, Reading, was second, having good Black Hamburgh Grapes and Melon, with well coloured Violette Hâtive Peaches and Lord Napier Nectarines. Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, was third, Madresfield Court, Buckland Sweetwater, and Pine Apple Nectarines were his best dishes. Mr. J. Evans, gardener to Lady L. Ashburton, Melchet Court, Romsey, being fourth. Five competed with three bunches of black Grapes, the best coming from Mr. C. Warden, gardener to Sir F. Bathurst, Clarendon Park, Salishury, who staged good sized clusters, even berries, and well finished. Second, Mr. W. Allen, whose bunches were rather loose, with fine berries and good colour. Third, Mr. C. Curtis, gardener to J. S. Dixon, Esq., Hollybank, Hythe, with large bunches and berries, but not well coloured. For three bunches of white Grapes, Mr. E. Molyneux was the only competitor, staging good Buckland Sweetwater. For two bunches of black Grapes Mr. E. Molyneux was an easy first with Madresfield Court, only wanting a trifle more colour to make them perfect. Mr. W. Sanders, gardener to J. East, Esq., Longstock House, Stockbridge, was second. For the same number of white bunches Mr. C. Curtis led the way with large Foster's Seedling, moderately coloured. Mr. J. Allen, gardener to Captain the Hon. V. Montague, Wherwell Priory, Andover, was second. The best single bunch of black Grapes came from Mr. C. Molyneux, who again staged Madresfield Court of capital quality; Mr. J. Evans being second with Black Hamburgh, fine in bunch, berry, and colour; Mr. Warden was third. Mr. C. Curtis, with Foster's Seedling, and Mr. J. Allen, with Muscat of Alexandria, took the honours as placed for one bunch of white Grapes. For one Pine Apple, Mr. G. Lock, gardener to W. B. Cleave, Esq., Newcombe House, Crediton, was first with Smooth Cayenne of good size, Mr. Ward following with a fair Queen. The best scarlet flesh Melon came from Mr. J. Evans, a small Read's Hybrid, with Turner's Scarlet Gem; Messrs. W. & G. Drover, nurserymen, Fareham, was second. Seven competed with one green flesh Melon, Hero of Lockinge from Mr. Ward taking first honours; Mr. W. Sanders being second with the same variety. Mr. G. Garner, gardener to Mrs. Bradyll, Amberwood, Christchurch, third. For one dish of six Peaches nine staged. Mr. C. Curtis was first with Royal George, richly coloured; Mr. J. Allen, second, with large Late Admirable. For one dish of six Nectarines ten staged, Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough, with Elruge, beautifully coloured, but small; Mr. Molyneux, second, with Pine Apple; Mr. C. Curtis third. For six dishes of fruit, outdoor growth, distinct, Mr. J. Evans led the way with Gooseberries, Red Currants, and Strawberries, all fine; Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was a close second; third, Mr. W. Sanders.

Vegetables.—The competition in all classes was keen, and the produce staged was of remarkable excellence. For twelve distinct varieties, two kinds of Potatoes allowed, round and kidney, seven competed. Mr. C. J. Waite, gardener to Col the Hon. W. P. Talhot, Glenhurst, Esher, was first, staging in his usual style, his best dishes being Webb's Giant White Tripoli Onion, Webb's new Kinver Cauliflower, new Intermediate Carrot, long and clean, Webb's Stourbridge Glory Potato, a long variety of good shape; Reading Perfection Tomato, extra good, and Ne Plus Ultra Scarlet Runner Bean, fine dish. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, was a close second; Early Puritan Kidney Potato, clean and good; the Duchess Pea, of fine colour, extra large; Standard Bearer Celery, and Tomatoes were his best dishes. Mr. T. Wilkins, gardener to Lady Theodora Guest, Inwood House, Hurstridge, Blandford, was third with smaller produce, but neat and good. For nine varieties eight competed. Mr. F. J. Cox, gardener to R. K. Wyndham, Esq., Corhampton House, Bishops Waltham, led the way with the Turner Hybrid Tomato, Duke of Albany Pea, and White Elephant Onion, all of first quality. Mr. Molyneux followed closely, and Mr. J. Allen third. For six varieties, the prizes offered by Messrs Webb & Sons, there were eight entries, Mr. C. J. Waite being again first, his exhibits being similar to those in the larger class; Mr. Pope and Mr. T. Wilkins being second and third. For the best nine specimens of Sutton's Reading Perfection Tomato, the prizes being offered by this firm, seven competed, Mr. C. J. Waite securing first honours with large, even, well ripened fruits, Mr. T. Annalls, gardener to T. J. Shenton, Esq., The Glen, Golden Common, Winchester, being second, Mr. G. Inglefield being third. For one dish of Tomatoes Mr. W. Joy, nurseryman, Shirley, staged splendid Hackwood Park, and was easily first. Mr. Waite and Mr. Cox followed in the order named among twelve entries. For four sorts of round and four sorts of kidney Potatoes, six of each, nine competed. Mr. R. West was first with tubers of capital quality, being clean, of even size, Mr. Bresee, Sutton's Seedling, and Chancellor being the best. Mr. W. Sanders followed close, Mr. H. W. Ward being third, he also staging good quality.

Cut Flowers.—For the most elegantly dressed table with flowers suitable for six persons, five competed. Mr. G. Lock was awarded first honours with a well arranged table, three epergnes gracefully yet not heavily filled with appropriate flowers, amongst which were intermixed long, narrow, gold-coloured Croton leaves hanging from the summit of each stand, which produced a decided effect, the specimen glasses being lightly filled with Stanhopeas and Anthuriums, and Ferns. Second, Miss Flight, Cornstiles, Twyford, Winchester, the base of her centre epergne being rather too heavy, while the placing of the purple Beech leaves on the cloth around the epergne added still more to its heavy appearance; the four corners of the table were also rather crowded. Third, Miss Stratton. The best decorated epergne was from Mr. J. Cypher, nurseryman, Cheltenham, with a splendid arrangement, the base particularly so, and the flowers of the choicest, Francoa ramosa and the foliage, long and drooping, of Russelia juncea, being effectively used along with Orchids and other choice flowers. Mr. J. R. Chard, nurseryman, Stoke Newington, and Miss B. Flight being second and third respectively. The most tastefully arranged basket of flowers, open only to ladies, Miss B. Flight led the way with a choice arrangement, followed by Miss Hohhy, Freemantle. The same two competitors were placed in the same order for a basket of wild flowers and grasses, the first prize one being charmingly arranged as to colour. For the most elegant hall bouquet Mr. J. R. Chard was first with a rich arrangement, of Orchids principally, Messrs. Perkins & Sons, Coventry, being second. The latter reversed their position for one bridal bouquet with a splendid arrangement, Mr. Chard being second for one not so light in arrangement. For six buttonhole bouquets Messrs. Perkins again took first with extremely neat and choice arrangements, principally Orchids, Mr. Chard being second. For twelve bunches of cut flowers, distinct, Mr. Evans was first with a choice collection, followed by Mr. H. James, nurseryman, West Norwood. For twelve varieties of hardy herbaceous cut flowers, Mr. Molyneux was an easy first with a splendid hox, chief amongst them being Phlox Max Kolb, Rudbeckia lævigata, Trachelium cœruleum, Lychnis Flos-Jovis; Mr. B. Ladhams, florist, Shirley, and Messrs. J. Cheal & Sons, nurserymen, Crawley, Sussex, being second and third respectively. The best double and single Pelargoniums were staged by Mr. G. Busby, gardener to F. Willan, Esq., Thorahill Park, Bitterne. For twenty-four blooms of Roses, distinct, Messrs. Keynes, Williams and Co., The Nurseries, Salisbury, was first with flowers full and rich in colour, Beauty of Waltham, Alfred Colomh, Charles Lefebvre, and Marshal P. Wilder being most noteworthy, Messrs. Perkins & Sons being second. For twelve blooms of Roses, distinct, gardeners only, Mr. W. Clements, gardener to H. J. Gihbs, Esq., Foord, near Salisbury, and Mr. W. Neville, gardener to F. W. Flight, Esq., were first and second respectively. The best Carnations and Picotees, twelve of each, were staged by Mr. J. Ribbeck, 5, Bevois Terrace, Southampton.

The following exhibits were staged not for competition:—A double crimson Begonia from Mr. Wills, which received a first-class certificate, compact in growth, with full solid blooms. Two boxes of Roses from Messrs. Keynes, Williams & Co. Messrs. Cheal & Sons, Crawley, Sussex, had two boxes of Pompon and single Dahlias of good appearance. The new seedling Potato Webber's Early White Beauty, which has already received a first-class certificate from the Royal Horticultural Society, as its appearance merited (it is said to be of excellent quality and very early), was shown by Mr. F. Wehber, Tonbridge. Messrs. Cannell and Sons, Swanley, obtained a certificate of merit for cut blooms of double and single Begonias, also several plants of a very fine double white Begonia Octavie, a full Camellia-flowered kind of excellent quality. Messrs. Lucombe, Pince & Co. staged fine Carnations and Picotees, also forty-eight blooms of Rose Niphetos. Mr. Rogers, Red Lodge Nursery, had a capital collection of 150 plants, representing the best of his collection of hardy shrubs, arranged effectively at one end of the tents. The effect was good.



KITCHEN GARDEN.

Sowing Autumn Onions.—All who take an interest in Onions know the Giant Rocca and Tripoli types, seed of which is sown in autumn to afford bulbs in spring and early summer. They are most useful at that time and for exhibition purposes. On or about the 12th of August is our date for sowing the seed. We have tried it both before and after that date, but never found any answer so well as the 12th, as the plants become a good size before the winter, and very few "bolted" in spring. The latter is important, as we have known whole beds of autumn-sown Onions run to flower in April and May and never bulb. The soil for these Onions should be well manured and fully exposed to the sun. To prevent worms or grubs doing damage sprinkle a good quantity of salt in with the manure before digging, and if the soil is so dry that it will not stick to the feet tread the surface very firm after digging, but before sowing the seed broadcast or in rows. If in the latter sow 10 inches apart, and in all cases cover with soil to the depth of 1 inch, as it keeps the plants firm at the collar throughout the

winter. Apart from these Onions furnishing good bulbs in spring they also supply useful green ones for salad from November onwards, and where they are much used in this way a large quantity should be sown.

ONIONS BULBING.—The present is a poor season for Onions bulbing. We have never known them so backward. Some years ago we had spring Onion bulbs measuring 11 inches round on July 20th. At the present time we should have difficulty in finding any to measure 6 inches round, and judging from the spring Onions we have lately seen at shows this deficiency is general. We must not think of harvesting the spring Onions this year in August, but it may be necessary to allow them to grow until the end of September before they are large and matured. The latter condition is important. Where the stems are strong and upright twist them over a little to expose the bulbs to the sun. The bulbs of the Onions sown last autumn, especially Trebons, are very fine now. We have them 20 ozs. in weight, with no signs of splitting; but where they are going in this way the whole should be drawn and laid in the sun to dry. Do not lay them on the soil or a wet spot, but place them on a dry base, such as a walk.

CUCUMBERS IN FRAMES AND IN THE OPEN.—Open-air Cucumbers are not the success now they were last year; fruits are few and long in swelling, and in some instances they have failed altogether. Plants in frames have also been slow in bearing of late. The heat is gone from the manure beds, the sun has not been sufficiently powerful to forward them, and if immediate attention is not given them there may be a blank in the Cucumber supply. In any case frame Cucumbers should have extra attention, and if the old shoots are removed from the plants, a little surface dressing applied to the roots, and a good lining of fermenting material round the frame, there will be abundance of autumn Cucumbers in spite of the weather.

MATERIAL FOR MUSHROOM BEDS.—To have Mushrooms from November onwards the first bed should be formed in September, and material should be collected forthwith. Horse droppings are the best of all. If there are only one or two horses it will take a fortnight or three weeks to get sufficient. The manure should be put under cover in an open shed daily to keep it from rain, and turn it over daily to dry and sweeten it before making up the bed.

WINTER SPINACH.—There is no more useful vegetable in the garden in winter than Spinach. When a good plantation of it is well up and in abundant leaf by November it may be gathered from almost daily throughout the winter, and professional cooks can use it in such a variety of ways that it is never tiring. Fork a piece of ground from which Peas, Potatoes, or any crop has been cleared, open drills 15 inches apart and 1½ inch deep, and sow the seed rather thin, as it germinates so freely as a rule that thick sowing is a mistake.

LEEKS.—These may well be classed amongst the most useful of all winter vegetables. They will bear any amount of severe weather. Nothing in the way of cold or bad weather will injure them, and they are in season from November until May. Cooked and served like Asparagus they are really delicious. Early Leeks for shows are very well, but it is the main crop for the kitchen that is the most important, and it is not yet too late to plant a quarter for winter and spring use, but planting should not be delayed any longer.

GREENS GOING BLIND.—We notice many Savoys and Broccoli are losing their centres this season. It happens with us every year, but in some seasons is worse than others. This is a bad one, and unless cultivators examine their quarters and fill up the deficieneies with good plants the autumn may come and find them with plants well furnished with outer leaves, but minus the important centre. We have gone through this experience, but avoid it always now. We have also noticed plants are more apt to go blind in July than afterwards, and if all plantations are made good at once they may not require further attention.

PEAS.—Midseason varieties have furnished a long succession of pods this year. They did not fill very rapidly, but the abundance of moisture at the roots has kept them going. There is no object in keeping them, however, when once the crop has been gathered, and immediately this has been secured clear them away and fill up the ground with other crops. Save the best of the stakes, and as late Peas require extra support some of the stakes drawn up now should be put to them.

FRUIT FORCING.

FIGS.—*Early Forced Trees.*—The second crop is ripening fast, and watering at the roots must be diminished and syringing discontinued. As soon as the fruits are all gathered the trees may have a good washing with the syringe or garden engine to free the foliage from red spider, otherwise a circulation of dry warm air should be maintained in the house until the foliage begins to fall naturally. If the trees are infested with scale they may be syringed with soapsuds, adding a wineglassful of petroleum to every four gallons, kept thoroughly mixed whilst being applied with a syringe by stirring briskly with a broom handle or alternate squirts of the syringe into the vessel.

The earliest forced trees in pots may be placed out of doors in a sunny position, allowing them sufficient water. They must not, however, be placed outdoors until the wood is well matured. If the wood is unripe let them remain under glass, keeping them rather warm by day with moderate ventilation, and throw the ventilators open at night. Exposure to the atmosphere after the wood is sufficiently mature will harden it, which is of great importance, especially to Figs. Young trees in pots from cuttings in the spring, and which are intended for fruiting in the second or third year of their growth, must still be attended to in pinching off the tops of strong shoots to form the foundation of a symmetrical head in their first year's training.

VINES.—*Midseason Houses.*—The heavy rains, low temperature, and sunless weather have been against Grapes acquiring bloom and colour rapidly, but they have swelled well and are larger in berry than usual. A low night temperature, or 60° to 65°, will assist Vines carrying heavy crops, by giving them rest in the colouring process and in gaining bloom, it being accompanied by moderate ventilation, allowing a steady rise by day with abundance of air.

Muscats in the last stage of ripening will need fire heat to keep up a day temperature of 75° to 80°, 85° or 90° from sun heat, and 65° to 75° at night; light being essential to their fine amber colour, it may be desirable to stop the laterals somewhat closely. If the weather be very bright it may be advisable to draw a double thickness of herring-nets to break the fierce rays of the sun, and so prevent excessive evaporation, which is neither good for the foliage nor the Grapes. Make sure that there is no deficiency of moisture in borders, giving if necessary a thorough soaking in the early part of a prospective fine day.

Late Houses.—For such varieties as Lady Downe's and Muscats, which are liable to be scalded and have not completed stoning, a rather dry and warm atmosphere must be maintained through the night, with free ventilation by day. Inside borders must be attended to, and when necessary have copious supplies of water; and where the Vines are carrying a full crop of Grapes some stimulant, as a fertiliser of some approved kind, sprinkled over the border and well washed in, will be of advantage. Keep the laterals regularly stopped, not allowing them to be made to the crowding of the principal foliage, or in such quantity that they must be removed in great bulk at one time.

Ripe Grapes are keeping colour well, but in bright weather afford shade from powerful sun. Gentle fires will be necessary to admit of a free circulation of air, and if the wet weather continue outside borders should be covered with some material, spare lights being preferable.

Vines in Pots.—The canes of those intended for early forcing should be in the last stage of ripening, but if by reason of the cold sunless weather they are not ripening freely, fire heat may be applied, maintaining good ventilation, and supplying no more water than is needed to secure the proper maturation of the buds that are to afford fruit. Any Vines that have the wood thoroughly ripe may be placed in the open air against the south aspect of a wall or fence, to which the canes can be secured to prevent damage by winds. The roots must be protected from heavy rains either by laying the pots on their sides or some other means must be employed. Although all lateral growths are to be checked the old foliage must not be removed, but allowed to fall naturally.

Early Forced Vines.—These will have the wood thoroughly ripe, and should, the old foliage being retained, have the laterals cut away and some of the long shoots shortened, deferring the final pruning until the foliage is nearly gone. If, however, the old foliage is partly lost allow some lateral growths to remain to appropriate the sap, and so keep it from starting the buds relied on for furnishing next year's crop. Remove the old mulching and surface soil and fork it from amongst the roots, taking the advantage of raising any that are deep and laying them in fresh material nearer the surface, supplying good loam, with which has been incorporated about a fifteenth of crushed bones and wood ashes. The uppermost roots ought not to be covered with more than 2 or 3 inches of soil, and a moderate watering being given they will push into the new soil freely, whilst there is yet foliage upon the Vines, which will enable them to break strongly and give a good account of the manurial matter furnished in liquid form or from water passing through mulchings of rich lumpy material. When partial renovation or lifting is deferred until the leaves fall the start is not nearly so satisfactory as when performed whilst there is foliage on the Vines. Where the Vines are enfeebled by continuous early forcing and it exerts a deteriorating influence through their having to make their growth and perfect the crop under disadvantageous circumstances, continuous early forcing being a great strain on the energies of the Vines, it is most desirable to ease them occasionally (about every seven years) by a year's rest, during which they should be allowed to make rather more growth, every encouragement being given to a thorough recuperation both of the roots and Vines, if necessary thinning the old spurs or rods, and encouraging others in their place, whether it be shoots for spur pruning or canes for long pruning, as young parts allow of a freer access of sap, and the Vines consequently are regenerated by new parts supplanting, very much better and quicker results being effected by the process of partial lifting and a year's rest than making fresh borders and planting young Vines. The only thing important is to allow the young growths plenty of light, so as to insure thoroughly solidified wood and plump well-developed buds.

PLANT HOUSES.

Cinerarias.—Place these into larger pots as they need root room until they are in those in which they are intended to flower. Give the plants plenty of space, so that their foliage can develope naturally instead of being drawn up weakly. Plants that are crowded during the earlier stages of their growth are certain to lose their lower leaves by the time the flower spikes are advanced. This can be prevented by standing the plants from the first sufficiently far apart, so that light and air can freely penetrate amongst them. These are often grown too soft by keeping the frames close and overshading them. Large quantities will now be ready for placing into 6-inch pots, a very suitable size in which to flower dwarf strains; in fact, they are more useful for decoration in this than in larger pots. If a few large plants are desired they must be potted from the first without checking them. It is a mistake to allow the pots to become too full of roots before transferring the plants into others, whether required for large or moderate sized specimens. Later

plants may be lifted from boxes and placed into 60's. Those still in seed pans may be transplanted into boxes 2 inches apart. A fair percentage of leaf mould may be used amongst the compost in the early stages of the plant's growth. When in their largest pots good fibry loam should form fully three parts of the compost, the remaining part being composed of sand, leaf mould, and decayed manure.

Calceolarias.—Where these plants are appreciated as late in the season as it is possible to have them a little more seed may be sown. The earliest will be large enough for pricking out singly into pans or boxes. These may be placed about 1 inch apart, and when they have filled this space they can either be potted singly or placed into boxes until they are large enough for 3 or 4-inch pots. They do equally as well subjected to this treatment as when they are placed in small pots to start with.

Celosias.—Place the earliest plants into 5-inch pots and supply each one with a stake. Keep them close for a few days until they are rooting in the new soil, and then give them plenty of air to insure firm sturdy growth. Any plants in a rather backward state may be pushed on gently, but be careful not to draw them up weakly, or they will be liable to damp off just above the soil.

Mignonette.—Standards intended for winter and spring flowering should be placed, if not already done, in their flowering pots without delay. Train the plants on their trellises at the same time, and encourage them to make strong growths by admitting abundance of air to them. Remove the flowers as they appear, and dispose the shoots as they are made evenly over the trellis. Sow seed in 6-inch pots. Place the pots in cold frames and shade until germination has taken place, then admit air liberally.

Hydrangeas.—Take good cuttings from outdoor plants and root them at once. If taken where the wood is soft they will root quickly under handlights in any warm house where they are shaded from the sun. In making the cuttings it does not matter about cutting them to a joint, for they root just as freely from the stem. Directly they are rooted place them in cold frames for a few days to harden, and then fully expose them to light and air.

Violets.—Those intended for pots and frames are growing rapidly, as the past weather has been favourable for them. Remove all runners that the plants may form, and if dry weather sets in soak the soil with water and syringe freely to keep them free from spider. When attacked by this pest syringe the plants with a weak solution of sulphur.

Early-flowering Bulbs.—Roman Hyacinths, Paper White and double Roman Narcissus can now be obtained. The former may be placed thickly together in 5-inch pots, and the two latter in 1 inch larger, unless required solely for cutting in large quantities. With this object the bulbs should be placed in boxes. If the soil is in a suitable state for moisture no water will be needed before they are buried in ashes or other similar material outside.

THE BEE-KEEPER.

GENERAL MANAGEMENT OF BEES.

It was stated recently in a contemporary that it was advisable to lessen the size of the brood nest on the commencement of the flow of honey, as the bees would after this manipulation store more honey in supers. This advice is contrary to what is sought by most apiarians, and hinders the bees from storing much surplus honey, while it is sure to bring about swarming; in fact I used to practise this system to induce it, and scarcely ever failed. Much has been written on the advantage of having empty combs for obtaining a large harvest of honey, and I have explained how and when they should be made and used on the top of a hive to advantage. Instead of reducing the size of the body of the hive at the commencement of the honey flow, it ought to be enlarged if an extra harvest is desired. The Stewarton system again comes to our aid, and what we have practised for long is to give an extra under box filled with fresh combs or full sheets of foundation, then, if the honey is plentiful, large gatherings are made. If any bee-keeper has not tried this plan, let him do so, and compare the results of the two systems. The former prevents swarming where all is normal, and gives the bees great resources for ready storage, and if there is any truth or advantage in the saying, "that bees have first to store their honey below then carry it aloft before it is honey proper," then this system gives it, but I do not believe it, neither do I know any more than any other bee-keeper when the honey flow will commence. But I believe firmly that the nearer the bees are to the field of labour the greater will be the ingathering. Only one mile from my bees is a bee-keeper who works his bees as I do, and similar hives, only he is close to many Plane trees, has this year already taken 42 lbs. of surplus honey from each stock. While there they appear to have gathered little more than what will be required for their own use, and filled supers with combs and some honey which will have to be fed back, as I seldom get supers pure enough if longer in being filled than a fortnight. Unless in very fine weather, all my hives have excessive numbers of bees, which at the end of the season will be of no use to me, as nuclei will take their place shortly, but for the untoward weather would all have been formed, whereas I have only a third of what is required yet.

All my present stocks will go to people in want of bees; but for them what other use could I put the bees to than the brimstone pit, a more merciful and profitable way of disposing of them than allowing stocks to die through bad management. Perhaps after everybody has learned the simple art of bee-keeping the problem will be solved how best to dispose of surplus bees and some use found for them. There is no one more against the practice of sulphuring bees than I am, but I do not, like many, attribute my success to keeping surplus bees in autumn, however much I advise those to do so who have an early but short honey season.

QUEEN REARING.

What ought to have been done in May and June will this year have to be performed in August and September, when if a few fine days occur, will serve our purpose for next year better than if the season had allowed us to finish that work earlier, as the queens with youth on their side will perform their work more satisfactorily for us next year, and lessen the surplus bees to be given away or destroyed. When our breeding queens are kept in one of the "best hives," it is an easy matter to exchange a frame of brood, even although supers are on, and give it to a queenless stock, which after ten days or less is divided into nuclei, each box having four shallow frames. After these are nursed for some time, I either tier or put them into a full-sized divisional box, placing it on a box or feeding-back stand where all the odd pieces of honeycomb are put for them to clean out. As the bees increase, I either give an additional box with comb foundation, or select the finest combs from my "condemned stocks" and build up all my nuclei with them, extracting the honey from the purest only, while the drone comb is melted down along with the rest after all the honey has been extracted by steeping it in water for mead-making, as a superior mead is obtained than from pure honey. After all this work is performed, by the end of September or the beginning of October, the hives are all levelled, and thoroughly covered and protected from wind and water, not to be disturbed again until the bees are crowding the hive, when they may either swarm, or I give them supers, as is most suitable, according to the season, always putting the empty one uppermost, unless when small supers are employed. Then I put the four empties two above each other at the coldest part, while nearly completed ones take that place on the top that the bees were finishing first and quickest. Suspended sections are easily managed, and full ones are removed while empty ones take their place. I doubt not but after a short time these sections will be in more repute, as they are in accordance with rational bee-keeping.

"The Best Hive" will be described, and instructions given how to make it in an early number, so that any amateur with but few tools can make them for himself. With some slight alterations it is now greatly improved on the first ones sent out, while it retains all the properties of the simple tiering hive, and can in that way be moved about from place to place in its single yet simple and perfect form.—A Lanarkshire Bee-keeper.

"A Lanarkshire Bee-keeper's" Hive.—I wrote several weeks ago stating I was anxious to obtain the cheap hive so highly spoken of by "A Lanarkshire Bee-keeper." I have procured one, and am perfectly satisfied with it. I have not the least doubt but that I shall get better returns from it than from the hive I have in use. I wish to express my thanks to "A L. B. K." for obtaining it for me. I hope to let you know the results another season.—R. A. Clark, *Kent.*

TRADE CATALOGUES RECEIVED.

James Carter & Co., 227 and 238, High Holborn, London.—*Choice Bulbs.*

Dobbie & Co., Rothesay.—*Flowers and Vegetables.*

William E. Martin, 20, Market Place, Hull.—*Dutch Bulbs.*

William Paul & Son, Waltham Cross.—*Catalogue of Bulbs and Winter Flowers.*

Cooper, Taber, & Co., Limited, 90, Southwark Street, London, E.C. —*Bulb Catalogue.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Exhibiting Stocks (*J. S. L.*).—For the purpose of exhibiting a stem with side branches is eligible, as also are stems without side branches, the judges then determining which represents the best culture.

Worms in Lawn (*Largs*).—As you are particular about having a reply in the "first issue," we can only say soak the lawn well with perfectly clear lime water. We are just going to press. Letters to which full replies are expected should reach us on Thursday, Friday, or Saturday.

Rose Buds (*Amateur*).—It is impracticable to state with any degree of certainty the time that elapses from the first appearance of a flower bud to its being fit for exhibition; it may be a month or more, according to the kind, and the conditions, favourable or otherwise, to its development.

Rose Leaves Discoloured (*Idem*).—The discoloration on the upper surface of the leaves is evidently due to the smoke, we having experienced similar deposits on the foliage of Roses when growing them in the vicinity of a large manufacturing town before the Smoke Nuisance Act came into operation; but in your case it is more pronounced, due probably to the sulphurous vapour and gases from the burning coal pit refuse, which, as we know from experience, is very prejudicial to vegetation, particularly when the fumes are brought to it by a strong wind whilst the atmosphere is moist.

Grapes (*H. B.*).—The Grapes sent in a paper box were smashed, and the juice almost turned the letter accompanying them into pulp. Only a portion of it can be read. The Grape in question is apt to be spotted, and extreme care is requisite in ventilation. So far as we can see you do not describe your practice in regard to temperature or ventilation.

Crossing Primulas (*J. E.*).—In fertilising short-styled Primulas with pollen from those having short stamens it will be necessary to divide the corollas in both cases, carefully removing the anthers from the flowers that are intended to produce the seed. A small camel's-hair brush is convenient for removing the pollen from one flower to another. If the plants are placed out as suggested seed will be readily obtained, but you cannot ensure any particular cross being effected. It is immaterial whether the plants have previously flowered or not.

Preserving White-hearted Cabbages (*A. A.*).—The best plan we have seen tried was to take up the plants, or cut them down level with the ground when the heads were quite dry, and cover them, stems, heads, and all, in dry bog earth. We have also tried the same in burned charred rubbish, but not with such good effect. They will keep a good while in a cool, dry shed, with their stems stuck in soil; of course, the place in all cases must be dry.

Insect Eggs on Rose Leaves (*T. H. G.*).—The eggs appear to be those of the Lackey Moth, Bombyx or Clisiocampa neustria, though it is not usual to see them at this season, but the caterpillars are probably late in hatching this year. They are small, nearly black, and very hairy, and do not appear to be particular as to food, as they eat the foliage of forest, fruit, and Rose trees, though not usually doing great damage to the latter. Search for the rings of eggs and crush them with your knife.

Disputed Prize Money (*H. D.*).—If you are paid the money in one class, we should think you would have no difficulty in recovering it in the others; and according to your statement we fail to see a valid reason for withholding a penny. The "other side" might possibly, however, put a different complexion on the case. In the absence of that, and if your employer and the head gardener support you, you appear to be on firm ground. You can have the card returned if you send us a stamped envelope directed to yourself

Muscat Grapes Shrivelling (*William*).—A temperature of 80° to 85° in the day by fire heat alone is excessive, and calculated to induce premature shrivelling. We should lower the night temperature to 65°, the top ventilators not being quite closed, and not force it much above 70° in the day with fire heat solely, but it may rise steadily to 85° with sun heat. You do not describe your method of ventilation, nor indicate the weight of the crop; it may possibly be too heavy for the Vines.

Cottagers Exhibiting (*J. R. W.*).—At exhibitions of garden produce in which classes are provided for cottagers they ought to be framed on an equitable basis; and beyond all question under gardeners in gentlemen's establishments have an undue advantage over labouring men and cottagers who are not employed in gardens. No objection can, however, be sustained this year if the rules are complied with; but action can be taken to amend the rules, or make classes fair for all before the next exhibition.

Pruning Roses (*K. O.*).—The very weak and the very strong wood of all Roses should be pruned in July, not in October or November. After the first flush of summer bloom is over every Rose ought to be "regulated," which means the same as the summer pruning of Currants and Gooseberries. The very weak wood of all Roses ought to be cut out at the end of October, and all the unkindly and weak Roses you see here and there on standards ought to have their annual winter thinning before October has passed. All moderate Roses to be pruned in March, and all very strong ones not till April.

Successional Peaches (*J. M.*).—As you have Early Beatrice, Royal George, and Noblesse on the front trellis, and three very excellent varieties they are, we may state that Bellegarde ripens about the same time as Royal George and Noblesse, or only a few days later. It is a very excellent Peach. Perhaps Barrington would best meet your requirements, or Belle Bauce, a variety of Grosse Mignonne, but larger and later by a fortnight. To succeed the Barrington, Walburton Admirable is a large good Peach, and Sea Eagle is also large and excellent. Stirling Castle is only a form of Royal George, and very fine, being hardier, and good in every respect.

Oil Stoves in Peach House (*J. W.*).—The fumes from petroleum-heated stoves will not injure the Peach blossom and embryo fruit, care being taken to insure thorough combustion, and to use the best or crystal oil, though two or even three stoves might not answer your purpose in such a long house. It is very desirable to remove the roof lights where they are moveable, and expose the trees fully from the leaves falling until the bloom buds are swelling and showing colour in spring, when the lights should be replaced. Failing being in a position to remove the roof lights, ventilation should be given to the fullest possible extent through the winter. The Chrysanthemums will not do the Peach trees any harm provided they do not shade them before the leaves have fallen, and the house is not kept close and warm for them.

Melons not Swelling (*Puzzled*).—Melons not swelling to a good size is often a consequence of the soil being too loose so that the roots ramify through it quickly and produce rampant growth. Melons, however, have not swelled to their usual size this season, due, we think, to the dull cold weather, which has not been favourable for the elaboration and assimilation of the food supplies, therefore they are expended on growth instead of concentrated on the fruit. We can only suggest that the soil be made firm, so as to cause resistance to the roots and check exuberant growth, and the foliage be kept rather thin so as to effect the thorough solidification of the growth, causing it to transmit supplies of elaborated and assimilated matter to the fruits, upon which not only depends their size but their weight and quality.

Mushroom Spawn (*Milltrack*).—We remember answering a question on this subject some time ago, but we do not think it was sent by you. The mycelium in old Mushroom beds varies exceedingly. Some we have seen used successfully by persons able to select the best portions; but failures are far more numerous than successes, otherwise the practice would have become general long ago, whereas exactly the reverse is the case. The thickest and most prominent threads—the strongest-looking of the spawn—are the most likely to be chosen by the inexperienced, and the most likely to fail. If you use it, proceed experimentally. It is not nearly so reliable as the best brick spawn, and if what you have had has proved satisfactory, you cannot do better than procure more from the same source. When the mycelium is used from beds, larger pieces are inserted than of brick spawn.

South-east Wall for Vinery (*W. C., Gloucestershire*).—The wall covered with a house similar to the other part used as a Peach house would no doubt enable you to grow good Grapes. The foliage would not be particularly liable to scorch, provided due attention were given to ventilation in the early part of the day, and reducing correspondingly early in the afternoon, so as to utilise the sun heat. For the early house four rows of 4-inch pipes—*i.e.*, two flows and two returns, and to grow and keep late Grapes well they require to be started in good time and assisted with fire heat in the early stages and at ripening; indeed, in a cold season like the present it is necessary to employ it right through;

therefore, we advise an equal quantity of piping for the late as for the early house, it being more advantageous to have a gentle warmth in the pipes than, by having little piping, be under the necessity of heating the surfaces highly to secure the requisite temperature.

Grapes Scalded (*A. B. C.*).—The Grapes sent are what are popularly described as being scalded, due, it is said, to the sun shining on them before the moisture deposited on the berries in the night is dissipated. But that theory is not sustained in the examples before us, for there are shrunken berries all round the bunch, and in parts where the sun could not reach. The injury, instead of being the result of excessive heat, we believe is caused by a moment of extreme cold, which always accompanies evaporation, and the more active this is the greater the degree of cold, and the more likely the tender cuticle of the fruit to be injured. The atmosphere of the house has been too damp, coupled with, we suspect, a too low night temperature ; though you do not say a word on the temperature that has been maintained, nor the system of ventilation practised—indeed, you leave us to guess everything, except your having Ferns in the house. Grapes can be grown with a few plants in the house very well if care is exercised in watering and ventilation, at the same time maintaining proper temperatures. The colder a damp house is at night the greater the deposition of moisture on the fruit, and the longer the ventilators remain closed in the morning the wider they are usually opened, and the greater the outrush of air and moisture, including evaporation from the fruit ; then follows the collapse in the form of shrinkage. Raise the night temperature 5°, whatever it may be now, not entirely closing the top sashes, admitting more air by degrees early in the morning, keeping the increasing heat under your control, and further injury may be averted. Are you not overcropping the Vines ? The lateral bearing the fruit is very weak indeed, and the stalk of the bunch too. The majority of the leaves in the box we suspect were not taken from the Vines bearing the chilled fruit, and if our surmise is right it is a little curious you should have put them in and said nothing about it, as they might have misled, the character of the leaves affording a better index of the condition of Vines than does a half-grown bunch of Grapes.

Broccolis Dying (*W. N.*).—Your plants are attacked with the ambury, a disease known as club root and finger and toes. As you have been a gardener so long you may consider yourself fortunate in not having been troubled with a case before. It is a very bad case, judging from the examples sent, and the evil may not be easily eradicated. Cabbage and Broccoli plants are frequently infested with ambury in the seed bed, which infection appears in the form of a gall or wart on the stem near the roots. This wart contains a small white maggot, the larva of a weevil. If on the gall and its tenant being removed the plant is again placed in the earth where it is to remain, unless it is again attacked, the wound usually heals, and the growth is little retarded. On the other hand, if the gall is left undisturbed the maggot continues to feed upon the alburnum, or young woody part of the stem, until the period arrives for its passing into the other insect form, previously to which it gnaws its way out through the exterior bark. The disease is now almost beyond the power of remedies. The gall increases in size, encircles the whole stem, and prevents the sap ascending, consequently sufficient moisture is not supplied from the roots, the leaves wither, and the plant dies. The ambury usually attacks these crops when grown for successive years on the same soil. This is precisely what might be expected, for where the parent insect always deposits her eggs, some of these embryo ravages are to be expected. The ambury may usually be avoided by frequent transplantings, for this enables the workman to remove the excrescences upon their first appearance, and renders the plants more woody, the plant in its tender sappy stage of growth being most open to the insect's attacks. Late plants often escape when early ones succumb. Plant any you may have, after cutting off any small excrescences, dipping the roots as advised on page 111 last week. Give the ground when vacant a good dressing of gas lime as there advised, but it must not be cropped for three months afterwards. If you cannot wait so long, or procure gas lime, give a still heavier dressing of ordinary lime, and you may crop the land a week or two afterwards. The whole garden should be limed.

Phylloxera on Vines (*King's Weston*).—We had no difficulty in finding both insects and eggs on the roots of the Vines you sent us. They are seriously attacked with phylloxera, and can never be expected to do any good until that pest has been eradicated. The Vines should be cleared out at once, for to retain Vines in the condition in which yours are is only a waste of time, and no treatment, however good and skillfully applied, will insure a satisfactory crop of Grapes. The only proper course open to you is to burn the Vines, roots as well as tops. The whole of the soil must be cleared out and burnt, so that the destruction of eggs and insects that may be attached to small roots amongst it will be certain of destruction. The soil should then be carted away some distance. The whole of the drainage should be removed, but before doing so give it a thorough soaking with boiling water and salt, a strong solution ; failing this thoroughly saturate the drainage with a strong solution of petroleum, say half a pint to each gallon of water that may be necessary. This done, wash every particle of soil out of the walls and pillars upon which the pipes are resting ; in fact, every part of the house in which it is thought possible insects or eggs may be secreted, not omitting the wires, pipes, and woodwork of the house. This done, the base of the border must be thoroughly saturated with the same solution. Then go over the brickwork again, syringing thoroughly into every crevice a solution of muriatic acid and water, a 3-inch potful of the acid in each gallon of water will make a sufficiently strong solution. Be careful to keep this acid off your clothes or boots, for it will burn them. After this we advise all the brickwork to be pointed with cement. To save labour every hole and crevice can be filled up if the cement is mixed in small quantities, very thin, and applied with a whitewash brush. When this has set wash the pillars and all the brickwork with boiling hot lime. The house should be well painted. If you have other Vines near it may be necessary to destroy them also, but that is a matter that must be decided on the spot. At any rate the house should be kept from Vines, at least for a season. Use it for other purposes. If you have convenience raise Vines in another part of your garden and grow them in pots for a year before planting. But in spring place a young Vine in the house you have been cleaning, and examine with the aid of a glass its roots at intervals of a month to see if they are perfectly free from phylloxera. The extermination of this pest depends entirely upon doing the work thoroughly, for half measures will only end in failure and disappointment. Do not use the old drainage again, but cart it away and put down fresh drains. No fault whatever in this matter can attach to you, for Vines under the charge of many good gardeners have fallen a victim to this pest. Some of the grubs on your Cauliflowers were the same as those referred to, and others resembled the larvæ of a weevil. We should say your land requires a heavy liming. The name of the flower sent is Lythrum salicaria.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. C.*).—The specimen was a poor one, and had suffered greatly in transit ; but it resembles Dictamnus Fraxinella. (*W. R.*).—1, Odontoglossum crispum, a good variety ; 2, Masdevallia Harryana. (*H. S.*).—Erigeron asper. (*R. O. M.*).—Campanula Trachelium.

COVENT GARDEN MARKET.—August 8th.

PRICES unaltered, with business unsettled the last two or three days.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve..	0	0	to	0	0	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	2	0		6	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	0	0		0	0	Peaches, dozen	2	0		10	0
Currants (Red). ½ sieve ..	2	0		3	0	Pears, dozen	0	0		0	0
,, (Black). ½ sieve..	3	0		3	6	St. Michael Pines, each	3	0		5	0
Grapes, per lb...	1	6		3	0	Strawberries, per lb. ..	0	6		1	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet ..	0	6		1	0
Beans, Kidney, per lb. ..	0	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt...	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch..	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100 ..	0	0		0	0	Potatoes, per cwt... ..	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen ..	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle ..	1	6		0	0
Cucumbers, each	0	4		0	7	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Heros, bunch	0	2		0	0	Tomatoes, per lb.	0	6		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches ..	2	0	to	4	0	Marguerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms ..	2	0		3	0	Mignonette, 12 bunches	1	0		3	0
Asters, dozen bunches ..	4	0		6	0	Pansies, 12 bchs	1	0		3	0
,, French, per bunch	1	0		1	6	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	0	0		0	0	,, scarlet, 12 trusses	0	4		0	6
Bouvardias, bunch	0	6		1	0	Pinks, various, 12 bunches	2	0		6	0
Calceolaria, 12 bunches..	4	0		6	0	Polyanthus, 12 bunches ..	0	0		0	0
Camellias, 12 blooms ..	0	0		0	0	Pyrethrum, doz. bunches	2	0		4	0
Carnations, 12 blooms ..	1	0		3	0	Roses, Red, 12 blooms ..	0	9		1	6
,, 12 bunches ..	4	0		6	0	,, (outdoor), 12 bchs	2	0		6	0
Cornflower, 12 bunches..	1	6		3	0	,, (indoor), dozen ..	0	6		1	0
Daisies, 12 bunches ..	2	0		4	0	,, Tea, dozen	1	0		2	0
Epiphyllum, 12 blooms ..	0	0		0	0	,, yellow	2	0		4	0
Eucharis, dozen	3	0		6	0	,, (Moss), 12 bunches	4	0		9	0
Gardenias, 12 blooms ..	1	6		4	0	Stephanotis, 12 sprays ..	1	6		3	0
Lapageria, coloured, 12 blooms	1	0		1	6	Stocks, 12 bunches	4	0		6	0
Lilium candidum, per bunch	1	0		1	6	Sweet Peas, dozen	3	0		6	0
,, 12 blooms	0	6		0	9	Sweet Sultan, 12 bunches	2	0		4	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tropæolum, 12 bunches	1	0		2	0
						Tuberoses, 12 blooms ..	0	6		1	0
						White Gladiolus, 12 sprays	0	6		1	6
						White Lilac, per bunch ..	0	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Fuchsia, dozen pots ..	3	0	to	9	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen ..	0	0		0	0
Calceolaria, per dozen..	4	0		5	0	Heliotrope, dozen pots ..	3	0		6	0
Cineraria, dozen	0	0		0	0	Ivy Geranium	3	0		6	0
Coleus, dozen	2	0		4	0	Hydrangea, dozen	9	0		18	0
Crassula, dozen	9	0		18	0	Lilies Valley, dozen ..	0	0		0	0
Deutzia, per dozen ..	0	0		0	0	Lilium, various, doz. pots	12	0		21	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	6	0		12	0
,, viridis, dozen..	12	0		24	0	Mignonette, per dozen ..	4	0		6	0
Erica, various, dozen ..	0	0		0	0	Musk, dozen pots	2	0		4	0
Euonymus, in var., dozen	6	0		18	0	Myrtles, dozen..	6	0		12	0
Evergreens, in var., dozen	6	0		24	0	Nasturtiums, per dozen..	3	0		6	0
Ferns, in variety, dozen	4	0		18	0	Palms, in var., each ..	2	6		21	0
Ficus elastica, each ..	1	6		7	0	Pelargoniums, dozen ..	6	0		12	0
Foliage Plants, var., each	2	0		10	0	,, scarlet, doz.	3	0		6	0



HARD TIMES.

SWEET are the lessons of adversity when turned to good account, and many a farmer will have reason to bless rather than curse the hard times through which we are passing, when the struggle is ended, and he is once more launched upon the smooth waters of prosperity a wiser and better man. For we hold that it is not a mere question of capital as to whether a man is passing successfully or not through this great crisis in agriculture, but rather the possession of ability in farm management, the gift of adaptation in his practice so as to "meet the times," holding his hand in that which he proves be unprofitable, and striving where there is a margin of profit to add to it by every possible improvement in culture and general practice.

More than once at public meetings for discussion of the agricultural depression have we pointed out as a healthy and inevitable outcome of it, that superior farmers were not only holding their own but were gradually rising to higher things, not altogether as the poet sings, "On stepping stones of their dead selves," but rather by an intelligent grasp of the situation and its remedy. This is the better class of men into whose able hands the land must eventually fall, and however worthy others of the old easy-going school may be, it is inevitable that they must fail. It is not to the legislature or anything outside that we look for relief, but rather to downright earnest effort on our own part to obtain more and better produce out of the land, and more of the middleman's profits in the disposal of it. So far as is possible producer and consumer must be brought together and the middlemen avoided, but this cannot be done without intelligent co-operation among farmers. Is it not a disgrace and shame that so many middlemen find it worth while to attend every market of importance to come between producer and consumer? Very few farmers have to avail themselves of special market trains in comparison with middlemen, and yet we not only see crowded carriages on such trains, but prosperous wealthy middlemen travelling in first-class carriages upon the profits which fall so readily into their hands. We make no unjust reflection upon them, for they are perfectly justified in doing all the business they can, but we do wonder that an effort is not made to prevent hard won money from falling so easily into their possession. We may surely take a lesson from them in perseverance, tact, energy, and all that goes to build up the character of a keen man of business.

To come to particulars of improvements in farming we may turn first of all to Wheat. "Surely the depreciation in value of one commodity only—namely, Wheat—should not be sufficient to ruin British agriculture!" said an able writer in the pages of a contemporary recently. Nor has it, we reply, for not only has agriculture taken a turn for the better, but in Wheat growing generally there is a marked improvement. Writing from the very centre of the great corn growing district of East Anglia, we are able to say that throughout Suffolk the Wheat crop is excellent, not only in its promise of a yield of remarkable abundance, but in the evidence of the exercise of care in the selection of pure seed. Some of the very best crops of Wheat we know of are on farms where sheep folding is largely practised. Sheep and corn farming have long been united, and the union will become even stronger in the immediate future, for under skilful management it has proved more profitable than corn growing by the aid of any other manure ever can do; while the sheep are "growing into money" the land is being stored with fertility. Very different is this practice to that of a long fallow with frequent ploughings and a heavy dressing of farmyard manure. A long fallow should really be regarded as a necessary evil when, and only when, land is foul with weeds, and not as an indispensable necessity to rest land. Of many a field of Wheat, if the corn is well harvested, we may venture to say the yield will be five quarters and upwards; and we know that under good management such results are fairly profitable. We pay very little heed to published returns of corn averages, for we know they are false and misleading. There are really no means in existence of obtaining a reliable return of the quantity of corn grown per acre. The Board of Trade returns may give the number of acres under Wheat, but unless each farmer were to give the exact quantity of Wheat threshed by him, how can it be known what quantity is grown? So-called market returns are published, but they are altogether unreliable. We may mention one market in particular of which a report is published of the total quantity of corn bought and sold, where certain merchants assert they have made no return for years, and we are strongly of opinion that without an Act of Parliament we shall never have precise information about this matter.

WORK ON THE HOME FARM.

Of the progress of work there is really very little to say, for farm work of all kinds has been hindered so seriously by wet weather that it has been practically in a state of stagnation. Haymaking has been prolonged beyond all precedent, and much hay has been spoilt, especially upon marsh lands, which have been flooded, and in several instances the hay carried away by the water. Early winter Peas kept for seed have sustained much harm too, and much Trifolium and Clover saved for seed has been spoilt. The seed became full grown and almost ripe, the mowing had to be done, rain followed persistently day after day, and much of the seed started into growth.

Corn generally has suffered, much of it having been beaten down by heavy rain. We have seen winter Oats down as level as though a roller had passed over them; much Barley is also lodged, but Wheat so far has not suffered in this way. We have in drives seen several fields of Wheat with the ears of a very dark hue. Mildew is spoken of by farmers as inevitable if the weather continues so cold and wet. Well, we are not wont to play the part of an alarmist, and if only bright hot weather sets in now we may hope for an abundant yield of excellent corn. But if we do not have the much-desired change from abnormal cold and wet to bright skies and real summer weather, the summer is likely to prove most disastrous. Wheat has already risen to the profitable rate of 40s. a quarter, and sheep have gone up in price at a rate which has induced much rash speculation. If only Wheat could be kept at such a price with a good harvest before us there would be an end to hard times for farmers. An advance in price, however, generally leads to an increase in corn importation, and we may expect a glut of foreign-grown Wheat in our ports very soon.

Dairy farmers may be congratulated upon an abundance of food upon pastures such as they have not had for many years. They ought to have a well sustained yield of milk, and there can be no excuse for them if they fail to produce first-class butter and cheese this summer. Late broods of turkeys have suffered where the young birds have been allowed to run much into the long wet grass.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. July and August.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 29	29.815	57.1	55.2	S.W.	58.3	68.8	43.2	115.4	52.4	0.160
Monday..... 30	29.500	59.1	57.2	S.	58.5	72.4	54.7	120.4	53.9	0.210
Tuesday 31	29.425	54.8	52.3	N.E.	58.1	61.5	50.5	93.0	51.2	0.252
Wednesday.. 1	29.969	52.1	51.2	N.	57.3	59.2	50.5	75.0	50.8	1.392
Thursday.... 2	30.110	55.0	54.4	N.E.	56.4	68.7	51.2	120.5	51.2	—
Friday 3	30.266	57.7	55.3	S.	56.8	70.8	46.0	112.4	41.8	—
Saturday 4	30.147	59.5	56.9	N.E.	57.1	69.4	52.5	107.8	48.3	0.180
	30.090	56.5	54.6		57.5	67.3	51.2	106.3	49.9	2.174

REMARKS.

29th.—Morning fair and cool, fair afternoon, rain from 6.30 to 9 P.M.

30th.—Foggy early, then fair. Thunderstorm with rain at 3.35 P.M., and rain at intervals till nearly midnight.

31st.—Fair throughout, but only faint gleams of sun.

1st.—Rain began at midnight and was heavy from 7 to 9 A.M. again about noon, and 4 and 8 P.M., with thunderstorm and 0.90 inch of rain between 10 P.M. and 1 A.M. on 2nd.

2nd.—Slight rain very early, fine after 6 A.M., and throughout the day.

3rd.—Very misty morning, then fine throughout, with a well marked solar halo in afternoon.

4th.—Dull morning, fair day but not bright.

Another wet week, with temperature below the average.—G. J. SYMONS.

NOTES AT KEW.

A WET season suits the light shallow soil of the Royal Gardens, Kew, much better than a dry one, and when it is followed by a period of bright summer weather such as we have experienced within the past week, trees and outdoor plants of all kinds look as fresh in August as they do in May or early June. It would seem that the public have fully learned to appreciate these beautiful gardens, for on last Bank Holiday it is said that nearly 60,000 persons visited Kew, far outnumbering several of the metropolitan popular places of amusement, and this, be it remembered, without even a band to furnish an attraction. The visitors who crowd these gardens at holiday time are certainly not all botanists or even horticulturists, but the numbers afford a satisfactory indication of how widely spread is the taste which finds gratification in the contemplation of well-kept gardens and their numerous occupants. The public sense of the benefit they derive is best indicated by their behaviour, and it seems almost impossible that such an army could invade a garden and leave so few traces of their presence; indeed a couple of days afterwards no idea could be formed that Bank Holiday crowds had occupied the grounds, all was as neat and gardenesque as the most exacting could require.

No unprejudiced person can visit Kew occasionally without being struck by the fact that repeated efforts are being made to not only increase the usefulness of these gardens, but also to add to their popular attractions, and the steady continuance of this policy will always entitle the directorate to a liberal allowance from the public purse. But I commenced this letter with the object of giving a few notes upon what especially attracted my attention in a hurried run through the gardens recently from the Richmond entrance to the Kew Green gate. The houses, with one exception were carefully avoided, because the heat outside was quite sufficient, and there was plenty to see without subjecting oneself to a vapour bath. In the arboretum alone an afternoon might be profitably spent, but I could only give a brief glance at a few shrubs or trees on the way. Near the recently opened refreshment house and the winter garden are several beds occupied with Leguminous shrubs, and amongst them Colutea arborescens var. haleppica, is now the most noticeable. The flowers are small, but numerous, of a peculiar bright orange-red colour, quite a fashionable tint at the present time. The old form of C. arborescens, the European Bladder Senna, which has been cultivated in this country for over 300 years, has yellow flowers, and the variety haleppica from Aleppo has been grown here for about 130 years, but has been ranked by many as a distinct species. They have both been in flower for some weeks, and last extremely well, the flowers being followed by bladder-like pods.

We have not too many large leaved trees in gardens, and it is strange that the American Hickory, Carya alba, is not more frequently planted. Judging by its success at Kew this Carya is not very particular either as to soil or situation, and it would undoubtedly thrive as well in scores of suburban gardens as it does there. Even in towns it might be worth a trial, and too few experiments are made with a view to increasing the number of trees available for town gardens. The leaves are somewhat suggestive of the Walnut on a large scale, pinnate, with broad oval substantial pinnæ, and though not very closely branched the tree would be good in a small state for shade. In dry hot seasons we often see the golden leaved varieties of trees and shrubs in their best condition, but this season they have been mostly rather deficient in colour. Catalpa aurea seems to be one of the exceptions, as, despite the long continued rain, it has coloured well, the broadly developed leaves having assumed a fine golden tint, and specimens 3 or 4 feet high look remarkably well. The Guelder Rose, Viburnum Opulus, is loaded with berries rapidly becoming of a bright red colour, and there will be plentiful stores this autumn in most gardens for those who use these berries in various decorations of flowers, fruit, or foliage. Olearia Haasti is a New Zealand shrub, the merits of which are perhaps scarcely known, although it has been before the public for about sixteen years. It would, no doubt, be found unreliable as regards hardiness in some districts of England, but against a wall or in nearly all the southern counties it would be safe except in severe winters. At Kew it is grown in both ways, several fine bushes in a border near the rosery, and another against a wall, very little difference being noticeable in the health or floriferousness of the plants. Compact bushes 3 feet high have a good appearance in the borders. The leaves are small, shining bright green; the flowers white, in corymbose heads produced in great numbers, and very fragrant. As a white-flowered Honeysuckle, Lonicera japonica is worthy of notice, the flowers large with broad lobes, pure white when first opened, turning yellow with age. The fragrance is especially powerful and pleasing, the growth strong and the leaves oval.

The general bedding in front of the Palm house and down the Long Walk has not had time to recover from the rains, but several simple designs are displayed that will be better developed in a week's time. In the herbaceous ground and on the rockery the continued wet weather has suited the stronger growing plants admirably, and a varied effect is produced in colours and habit. The rockery is particularly attractive, and certainly improves every season, as it becomes better furnished, the sites adapted for certain plants are ascertained, and as much naturalness as possible is introduced. One little nook where a miniature waterfall descends from a rocky ledge and escapes through a bed of marsh or moisture-loving plants is charming, because there is no irksome artificiality. In the background are large clumps of Spiræa palmata with feathery trusses of rosy flowers; in front of these, and similarly luxuriant, are masses of Spiræa lobata after the style of the preceding, but having graceful plumes of white flowers. Then comes a grand clump of the old garden favourite, the Bergamot, Monarda didyma, which has an abundance of its bright crimson flowers in close whorls tier above tier. The foreground is occupied by a vigorous plant of Rodgersia podophylla, the spacious leaves of which serve the useful purpose of concealing the outlet of the water from the "fall." This plant affords a fine artistic study in bold foliage characters, and though only 2 or 3 feet high it is by no means framed on a puny scale. The leaves are 2½ feet in diameter, five somewhat triangular divisions radiating equally from the apex of the petiole, 9 inches across in the broadest part, deep green, becoming reddish as they mature. It is very telling in the waterfall nook, and evidently likes a moist situation. Upon one of the higher "rocky ridges" bordering this recess is a stately Yucca with a flower stem 10 feet high, towering above the surrounding plants and completing a pretty little picture that is so free and natural that one is tempted to think it is not a designed arrangement.

An excellent system is adopted on this rockery, and has been frequently commended, the same idea being carried out in the arrangement of the plants in the greenhouse and other structures. This consists in grouping a number of plants of one kind together, thus showing their character very much better, and producing more beautiful floral displays than when small plants are dotted about singly. Of course there are some plants which are seen to more advantage singly than in groups, but this refers chiefly to those of strong growth or some peculiarity of habit which does not admit of associating a number together. Some plants are also of a gregarious habit, naturally growing in clumps, clusters,

patches, or even extensive tracts. Occasionally a single specimen will develope to unaccustomed proportions, but general effect has often to be considered, and this is best accomplished by the grouping method. One example of the style is afforded by a plant that is not well known in gardens, though it might usefully take the place of several other plants of the great Compositæ family. This is Ursinia anthemoides, a Cape plant, which has also been ranked under the genus Sphenogyne. The flower heads are 1½ to 2 inches in diameter, with narrow, spreading, even, bright yellow ray florets, and a narrow shining black zone at their base surrounding the central tubular florets. The leaves are finely cut in a bipinnate manner, slightly glaucous, and the plant is 12 to 14 inches high. It is both showy and graceful, and no doubt would be found useful for cutting. An allied plant, Ursinia pulchra (Sphenogyne speciosa) is similar, but the flower heads are somewhat larger, the leaves being green, this apparently being the same species as that labelled Ursinia speciosa in the herbaceous grounds.

The strange-looking plant with an equally strange name—Statice Suworowi—covers a little plot of ground in one of the recesses, its long close cylindrical spikes of rosy flowers twisting and curling about like so many floral snakes. It cannot be said to be beautiful, but it is peculiar, and is worth growing for the distinctness of its characters. Calceolaria mexicana has a good-sized recess-bed devoted to it with capital results, the slender graceful habit and foliage, with the abundant delicate pale yellow flowers, giving it an admirable appearance. It has also been tried in the flower garden, not in the formal beds in the broad walk, but near some by-walks, and with satisfactory results. The leaves are pinnate and serrate, the stems reddish, the flowers with proportionately large lower lips and very pale clear yellow.

In the "Herbaceous grounds," that is, the department where the hardy plants are arranged in their natural order, flowers are very numerous, and nearly every bed would furnish ample material for an article. I can, however, only give passing attention to a few. The great Compositæ family is as usual in the summer months strongly represented by flowering plants, but one specially arrested attention as little known in gardens yet likely to be of considerable service. It is Calendula pluvialis, which the label also informs us is the same as Dimorphotheca pluvialis, popularly known in some gardens as the Cape Marigold, and in the matter of euphony there is no doubt that the adopted generic name will be preferred to the discarded one. Botanists we know have grave responsibilities in assigning plants to their correct position, or in giving them new names, but it is unfortunate that they seldom pay much regard to the elegance of the names bestowed, and so we get such terrible titles as Ostrowskya applied to a beautiful plant that will certainly become a favourite in gardens, yet we can only expect the name to be distorted and misspelled. In M. Godefroy-Lebeuf's paper "Le Jardin" for the present month the illustration of Ostrowskya magnifica recently published in the *Journal of Horticulture* is reproduced (without acknowledgment, by the way) and in some remarks accompanying the figure it is said "In France they will never say Ostrowskya, they will commence by saying Otrokya, then they will suppress the O, and will finish by selling the plant under the name Trokia," and most will admit that the abbreviation would be an acceptable one. But I was starting to say something about the Cape Marigold, which is an annual that deserves to be as widely known as the common Marigold, for it grows readily in any ordinary soil, seeds sown in early spring producing plants that flower freely at the present time. The flower heads are 2 inches in diameter, the ray florets substantial, white on the upper surface and purplish beneath, the central florets yellow, with a slight purplish zone at the base of the ray florets. The plants are 12 to 15 inches high, rather compact in habit, and the number of flower heads produced should render them useful for cutting.

Still wandering amongst the beds of Compositæ, some so-called Everlasting Flowers are noted, such as Antennaria margaritacea with numerous small white flower heads and whitish leaves; the elegant Helipterum roseum, with narrow glaucous leaves and pale to deep rose flower heads; Ammobium alatum grandiflorum, with strangely winged stems and white heads of flowers, and the indispensable graceful Rhodanthe Manglesi. All these are excellent for cutting and drying, together with Helichrysum bracteatum in many varieties. The double Achillea Ptarmica is a useful garden plant, the flower heads small, neat, and pure white, capital for cutting. Crepis rubra, with pale rosy blush flower heads, in the style of the Cornflower, is also worth a place.

Turning to another family, the Phloxworts—Polemoniaceæ—very attractive are the graceful little annual Gilias, mostly Californian plants that are not too frequent in gardens. Several species are flowering, but four of noteworthy merit are the following: G. micrantha, 6 inches high, small bright yellow flowers and short linear leaves; G. tricolor, 18 inches high, flowers white edged rose, a central zone of deep purple, and a yellow base, the leaves pinnate; G. androsacea, flowers white or faintly purple tinted, petals spreading, leaves long, linear, and hairy; and G. capitata, flowers small, blue, sessile, in dense umbel-like heads, leaves pinnately divided. This plant is much taller than the others, running up to 2 or 3 feet.

But these notes will occupy sufficient space for one week, and will keep a little in reserve for another letter.—MERTON.

CABBAGES FOR SPRING.

THE production of Cabbages in quantity, and as early as possible in the spring, being important with us, though sometimes difficult of accomplishment, has tended to increase the interest with which I have read "A Kitchen Gardener's" excellent remarks thereon, also the succeeding judicious observations of Mr. G. Hilton, and in support of the latter's contention that seed must be sown earlier than August to suit some districts and seasons, I beg to offer one or two instances of my own experience.

I may state that our seasons are comparatively backward, the position being an elevated one (600 feet above sea level) fully exposed, with a shallow soil resting on a cold clayey subsoil. Our usual practice had been to sow about the 25th of July, and then to plant out as soon as the seedlings could be obtained large enough for the purpose. Circumstances, however, have twice occurred causing a deviation from this rule, the first being in 1885-6, when in July of 1885 we planted late spring-sown Cabbages on a rather poor quarter for autumn cutting. These came on badly, only making extra large plants by winter, when it was decided that they should be cut for use on any occasion that other greens ran short. In the result they were allowed to stand through the winter, which had been severe, and had dealt hardly with the ordinary plantings, and I then observed to my surprise that they looked like forming hearts, so they were left, and we had 3000 splendid Cabbages a month earlier than our neighbours. About 1 per cent. only bolted.

The second instance occurred last year. The drought and the flea had conspired against the usual July sowing to such a degree that I could only count upon five thousand instead of twelve thousand plants. In this dilemma I turned my attention to April-sown plants, which owing to the same reason had remained small, standing thickly together. With my previous experience I did not hesitate to avail myself of this welcome supply, and the result this spring has been a magnificent bed of luxuriant Cabbages, not one in 500 of which bolted, but formed grand shaped hearts, such as compelled the admiration of those who saw them.

This year I reasoned that with such a continuous excessive rainfall it would probably require a longer season than usual to prepare the plants for their autumn quarters. I therefore sowed early in June. The seeds germinated very slowly, and the process of development into the rough leaf took a long time, so that the plants are still somewhat small, and are giving promise of being ready for planting by the end of this or the beginning of next month. I choose Battersea always to stand over the winter.—R. CATT, *Metropolitan Asylum, Caterham.*

WET WEATHER FLOWERS.

VIOLAS.

RAIN falling almost daily for weeks, and often heavily, rendering the month of July one of the wettest ever known, has afforded an opportunity for testing the wet-resisting power of outdoor flowers, and it would be interesting and useful if correspondents in various parts of the country would make known those that have been the

most satisfactory during the present season. So far as we have seen Violas have been in the ascendant, and it is a little surprising that these hardy dwarf-growing flowers are not more extensively grown. They are represented in the purest as well as the richest of colours. A row of the white Mrs. Gray, margined with a dwarf very dark Lobelia, at Swanmore, produced an admirable effect. Ardwell Gem has been a sheet of soft yellow throughout the rainy period, Dean's True Blue has not failed to assert its power over the elements, and the lustrous richness of Archie Grant has impelled almost everyone to ask for cuttings who has seen it. These are not mentioned as superior to all others, for it is possible there are varieties still better, and it is certain there are many not less beautiful but differing in colour.

Violas are grown more extensively in the north than the south, the northern climate no doubt suiting them ; but is there not something in culture and management ? Very satisfactory displays have been produced in the southern and midland counties, not this year alone, but every year, though it is equally true there have been many failures. These could be traced to two causes—natural unsuitability of soil, such as that of a thin, poor, gravelly nature, or errors in propagation and planting. The method of preparing and planting tender bedding plants seems to have become so firmly impressed on the mind as to suggest that in the estimation of not a few cultivators all plants intended for flowering in lines or masses during the summer must be prepared much in the same way, and planted at the same time. Raising Violas from cuttings in spring and planting them in May, as has been the case with thousands, is not the way to succeed, but to fail.

It should not be forgotten that Violas are hardy plants, and that they should be treated as such ; although, like some others, Carnations for example, young plants are often the better for a little protection from inclement weather, but cold frames suffice, and thousands pass the winter without their sheltering aid. We have seen an acre of cuttings inserted in the autumn at Swanley, or, to be more exact, cuttings inserted a few inches apart in depressed rows 9 or 10 inches asunder over an acre of ground, and the following year the plants covered with flowers throughout the summer. The soil is of a heavy nature, which is what Violas like ; but if the same plants had been planted with tender bedding plants after the middle of May they would have practically ceased flowering before half the summer were over, if the weather were by any means hot and the ground dry.

But Violas also grow with great freedom and flower continuously in comparatively light soil, provided it is deeply worked and enriched with cool manure, that from cow stables preferably, and stout young plants are inserted in March or as soon as the ground is in good condition for planting and the weather favourable for steady growth. Old plants are unreliable. They flower early, but not over a long period ; and young plants that have been "nursed and coddled" in boxes, then divided and planted as if they were so many Lobelias at midsummer, will similarly fail, except in seasons like the present, which we cannot always expect, neither do we want. Plants raised from cuttings in September, and in March hardy and sturdy, bristling with suckers, will flower all the summer if a fair chance is afforded them. The great point is to have the roots actively working in deep fertile soil before the hot weather of early summer sets in, and then in dry districts to mulch the ground between and around the plants with cocoa-nut fibre refuse, leaf mould, or short decayed manure, giving them a heavy soaking of water occasionally ; then they will be like Calceolarias, flower the more freely the hotter the weather becomes. No amount of sun will hurt either provided the roots are cool and moist, and this can usually be secured by working the ground deeply, manuring it well, planting early, and mulching early too, also freely.

There was never a better season than the present for commencing the culture of Violas. The plants are in full free growth and the ground moist. A dozen or two planted now in a suitable position, moist and cool, and well tended, would afford cuttings by the autumn, and a good stock could soon be raised. The best growths for striking and making the most satisfactory plants are those that spring from the base of the plants, or just within the surface of the ground, the stems solid and the growths flowerless, resembling Watercresses. Larger growths with hollow stems are not nearly so good, yet we have observed those chosen by men who have been told to "help themselves" to a few cuttings. They may strike them or they may not. They will fail if not inserted deeply, and then will not make compact, healthy, free and long flowering plants. As a rule the inexperienced do not insert Viola cuttings deep enough ; an inch above ground is ample, and 2 or 3 inches, or even more, within not too much, as young growths that are wanted start from the parts in the soil. These are the mere outlines of culture of a beautiful and too much neglected class of plants, and perhaps some successful grower will fill in such details that he thinks may be serviceable. There is no doubt of the attractive force of Violas. It was difficult to get near some well arranged stands from Mr. Dobbie at the Crystal Palace Rose Show, so keen were the visitors to inspect the flowers.—EXPERIENTIA DOCET.

For some years I have grown Violas, and have also endeavoured from time to time to call attention to their value in gardens generally, no matter on how great or how small a scale. I am pleased to see my friend, Mr. Dean, still as enthusiastic as ever among these favourite flowers, for there are few men who have striven in so many ways to bring the Viola to its present popularity as he has done. It is with much interest that I read the remarks concerning these flowers at page 113, and it is with even greater pleasure that I fully endorse what is there said of them. While we have our Begonias in a miserable plight, and Carnations and Picotees decaying ere they have had an opportunity of expanding their welcome blooms, and Roses in many cases as bad, the bedding Violas have never been finer. Particularly effective has been a favourite of mine, Ardwell Gem ; it is the best of the light yellows, and fully illustrates the value of Violas when they reach the age of twelve months. The plants in question occupy what I regard as my front garden, devoted principally to White Tobacco, Gaillardias, Geums, Iceland Poppies, Tuberous Begonias, dwarf Roses, Alstromerias, and Lilium candidum, growing much in their own way, and affording very pleasing results. Ardwell Gem was planted in this mixed assembly in June, 1887, and the patches of it are now 2 feet across, and have carried many hundreds of blossoms from the time they began flowering this year, which was in the latter part of February last, apart from what they did last season. As though they realised that they were doing better than the Roses they have clambered among the thorny branches, and thus produced a most natural and charming picture. Not only, then, as bedding plants by themselves may these Violas be grown and seen to advantage, but as carpets for other plants, and Roses in particular. Unhesitatingly do I reiterate the sentence contained in the last issue of the Journal, "Why do we so seldom see them in our public parks and gardens ?" Are the managers of these gardens ever going to rest content with those of the cornuta section, while we have so many grand bedders possessed of equally grand constitutions, and, so to speak, almost incessant bloomers ? Take for example a bed of standard Roses, what could be a more appropriate carpet for them than Violas ? Can any other plant be mentioned as likely to prove more floriferous or more generally attractive and lasting, and withal so hardy and enduring, as these Violas ? If additional effect in early spring was considered necessary, this could easily be supplied to Hyacinths or Tulips dotted over the bed. Take a bed of dwarf Roses planted thinly, and with such Violas as Ardwell Gem or Countess of Kintore amongst them, we have a permanent bed quite unique. Violas planted in this way as carpets need not be planted annually, since plants of twelve or eighteen months form a perfect sheet of blossom early in the year. All that is needed is to cut the old plants over closely in autumn, point the ground between them, and mulch with decayed leaves and manure. Violas generally look best after a good shower of rain ; such being the case they have this year been exceptionally fine, and it is impossible to over-rate their good qualities.

For long ribbon borders many varieties are especially well suited, and of these Mrs. Gray, Ardwell Gem, Queen of Lilacs, and Cliveden Purple compacta are among the best. Some of the more compact growers are True Blue, quite a gem in its way, admirably suited as an edging to silver-leaved Pelargoniums, so dwarf is it, a fine blue withal, and possessing a good constitution, renders it among the most useful in the shades of blue. One of the prettiest effects I have seen this year was brought about by planting Violas between rows of Pyrethrums in beds ; the rich and varied colours of both groups formed collectively one of the most beautiful pictures I have seen. Both were in grand condition in June, and the Violas still continue to do service. For a bold, rich, deep violet blue we have none to compare with Archie Grant ; it is a handsome flower, well formed, wonderfully robust and free, and produces its flowers on stems 6 inches long. Such an one as this may be brought into excellent use in mixed arrangements of plants, and is also highly effective in the foreground of well-kept shrubbery borders.

To the list of whites given on page 113 I would add Jefferyanum and Champion. The first is a medium-sized flower, very free and continuous, while the latter is the largest white known to the writer. It is excellent for early work, and partakes of the style of Pilrig Park, but has not so much blotch as that variety. There is another white which has been certified this year, and is named Snowflake. I do not see any improvement in it. It possesses the habit somewhat of Pilrig Park, though dwarfer, whilst its flowers

are more closely allied to Mrs. Smith, though quite distinct. When all our whites have been tried, we have none to compare with Countess of Hopetoun, which is excellent in all respects, and likely to stand the test of time. Of golden yellows Bullion and Golden Prince Improved are remarkable for their profuse free blooming qualities. The Queen of Spring types I have not yet grown so well here in Middlesex as I have done in the midland and northern counties, and I intend testing what older plants will do for me in this respect. The young plants do fairly, but they lack the size and freedom to which they are prone in and around Birmingham for instance, so I intend leaving this year's plants or a portion of them to flower next season, and see if any improvement is made. Mrs. Baxter and Countess of Kintore are both excellent. Sir Joseph Terry is a deep velvet black, while Duchess of Albany, Dawn of Day, Skylark, and Spotted Gem are great favourites. One variety in particular needs more than a passing word of praise – it is Bronze Queen, than which we have few Violas destined to become more popular by reason of its most distinct and useful colour—a rich bronzy, shining chestnut. Those who possess this variety should make the most of it, for some of them will be in greater demand. Two other varieties which I had lost sight of I have procured again this season ; they are Crimson Gem and Forerunner. Both varieties are first-rate bedders, of good form, and compact. The predominant colour of the first is defined in its name, while Forerunner is a rich violet or indigo blue shade, quite distinct. Any or all of these are calculated to produce a display in either large or small gardens of which no other plant can boast ; nor does any hardy plant provide such a continuous wealth of bloom at so trifling a cost or with so little attention as these Violas, facts alone which cannot but bring them into their right position in the floricultural world. I can only advise the would-be cultivator to closely follow Mr. Dean's advice as to their culture and propagation if they court success. With regard to the brown aphis, which is rightly regarded as "a terrible enemy," I find a solution of quassia and softsoap very effectual in their destruction ; but in this, as in most things, prevention is better than cure. And here, again, the reader will do well to follow Mr. Dean's advice, and keep his plants freely watered—an item which growers generally have not regarded as desirable at present this summer.—J. H. E.

TOMATO FAILURE AND DISEASE.

Last season was unusually favourable to the growth of Tomatoes in the open air, the crops in many instances fully equalling what are annually grown in America, at least so I was informed by those competent to express an opinion in the matter. As a consequence more plants were prepared and put out this year than at any previous time, and as a great failure is the inevitable result, let the weather in August be what it may, the disappointment will be all the greater. Recently I saw several large breadths of ground, both sheltered and exposed, covered with Tomato plants, or enough to produce many tons of fruit, and these at present are not furnished with any crop. Strong plants were placed out, these being either staked or trained up wires, and kept disbudded, or rather cleared of all side shoots, but the flowers fell as fast as they formed, and if any set it will be in August instead of June. Those against walls throughout the country are not in a much better plight. Any that are furnished with fruit had these set before they were planted, and even against extra warm walls or the fronts of forcing houses the crops are very light. As yet I have seen none affected by the Potato fungus, but a good per-centage of plants have sickly foliage, or such as delicately constituted Potatoes have that are rooting in a cold and wet soil.

Under glass the crops are far from being satisfactory, the greatest difficulty being experienced in effecting a good set. The flowers were weak and pollen scarce, and the majority turned yellow and fell. To add to the tale of woe a comparatively new and very destructive disease has shown itself in places where many large houses are solely devoted to Tomato culture. This is known as Cladisporium fulvum, and as yet no remedy has been found other than removing the leaves as fast as they are affected. Perhaps I ought not to call this a remedy, as it is very certain when all the principal leaves are removed from a plant the fruit cannot attain either to a good size or good quality. At the fruit-growing establishment above alluded to, which is situated in Gloucestershire, and many miles away from any other Tomato houses, I inspected several span-roofed houses not less than 100 feet long wholly devoted to Tomato culture, and to all appearance not one plant out of the many hundreds grown were free from this destructive disease or fungus. It was sad to see such a number of long naked stems, and sadder still to think there is no known remedy. In Guernsey and Jersey the Cladisporium was very destructive last season, but in spite of various precautions it is still worse this year, fruit as well as foliage being badly diseased. Evidently it is spreading through the country, and I am afraid the Tomato industry will receive a shock from which it will not quickly recover. This is much to be regretted, not only on account of the loss to the growers, to many of whom one or two failures may mean ruin, but also because of the check to the fast increasing love of and demand for Tomatoes.

At a recent meeting of the Scientific Committee of the Royal Horticultural Society, Dr. Masters suggested dusting the affected leaves with a mixture of sulphate of copper in fine powder and precipitated or newly slaked lime, this having been found efficacious as a remedy for mildew in the French vineyards. It has already been tried by a gentleman who owns several vineyards in the south of France, and is also much interested in wholesale Tomato culture in this country. Sulphate of copper and lime do check the spread of mildew, but it appears to be powerless against the more rapidly destructive Cladisporium, unless sufficient of it is used to destroy the leaves as well as the fungus on them. Diseases of fungoid growth are very hard to check, and especially so in the case of foliage that is not hard and smooth. This season is undoubtedly very favourable to the spread of mildew-like diseases not only among Tomatoes, but also Grapes, Melons, Cucumbers, and other fruit trees or plants. There is no remedy for the Potato disease, and I am afraid never will be ; but in some seasons we escape infection, and the Cladisporium may be only a temporary visitation.

Some diseases are constitutional, and may be perpetuated by seed saved from affected plants. Each time I have raised Melon plants from seed supplied by a friend a disease has manifested itself in the foliage. At first large yellow spots appeared, these soon spreading, apparently eating away the hairs and upper surface of the leaves, and the plants had to be destroyed. No other Melons before nor since were similarly affected, and I am firmly convinced the disease was in the blood or constitution of the plants. It was not one, but several varieties apparently possessing strong constitutions that were affected. I shall be told the Cladisporium is spread by means of floating spores, but all the same I cannot help thinking it may be spread by the medium of tainted seed, or else how did it reach such an out-of-the-way and healthy open district as the western counties ? As a large Guernsey grower stated in a letter to me, there is a fortune awaiting anyone who can devise a remedy for the Cladisporium, but although I have had sent me specimens of infected foliage in various stages, as well as diseased fruits, I liked the look of it so little that I would not keep it long on the place, or try to communicate the disease to our plants, with the idea of conductiug a series of experiments. If it comes naturally I may then make the attempt, but it is doubtful if the honour and profit of the discovery will fall to my lot, or indeed to that of anyone else, or it would have been forthcoming ere now.

At the present time (August 2nd) there is prospect of more settled weather, and plenty of hot sunshine may yet do much to improve matters, more especially in the case of healthy plants that have set few or no fruit. Those grown in the open cannot, under any circumstances, be expected to produce and ripen many fruits, but those against sunny walls and under glass are more likely to do better. Many have erred iu neglecting their plants. When it was seen no fruit was setting no further trouble was taken with them, and as a consequence the main branches are breaking down and a thicket of side shoots sprung up. No greater mistake could have been made, and it ought to be rectified, as much as possible, at once. All superfluous growth ought to be cut clean away, leaving only the main branches or leading shoots and a few strong side shoots where they can be laid in without crowding. This will encourage the formation and setting of a few strong clusters of fruit, and if the shoots are stopped beyond the second of these all will swell rapidly. The earliest may ripen on the plants, many more may be cut and ripened under glass, and the small green fruits can also be utilised for making into pickles.—W. Iggulden.

COLOGNE EXHIBITION.

An International Horticultural Exhibition was opened at Cologne on the 4th inst. under the patronage of the Empress Augusta of Germany, Her Imperial Majesty being represented on the occasion by the Minister of Agriculture, accompanied by a brilliant suite of high military rank. The place where the Exhibition is being held, for it is to remain open till the end of September, is the Flora Gardens, a public resort of the inhabitants of Cologne, where horticulture is fostered under the care of the distinguished Director, Mr. J. Niepraschk, a name well known among the horticulturists of Europe. These Flora Gardens are on an extensive scale, beautifully laid out and planted with great taste and skill, surpassing even the Royal Botanic in the Regent's Park, which is the admiration of so many. The design was executed twenty-five years ago by Dr. Lenne of Berlin, and carried out by the Director,

M. Niepraschk, and it was to celebrate this twenty-fifth anniversary of its foundation that this Exhibition was held. A grand banquet was given in the conservatory, which was well attended.

Like most of the exhibitions on the Continent which are intended to extend over a lengthened period, this was no exception to the rule of being unprepared on the day of the opening. Besides the exhibition of flowers, which was held in the glass houses of the establishment, there were long ranges of sheds surrounding an open field of about three acres in extent, which formed an annex to the garden, and was devoted to collections of implements of horticulture and agriculture, machinery, heating apparatus, and, indeed, the usual class of articles which are met with in similar exhibitions in this country. The field was well laid out with winding walks, and its surface occupied with clumps of specimen Conifers, standard and dwarf Roses, ornamental trees, and flowering shrubs. Mr. Charles Van Geert of Antwerp had a very choice collection of specimen Conifers. On the opposite side of this from the machinery was a department representing vegetable products, such as grain, dried fruits, beverages, including the famous Lager beers of Germany and the noted wines of the Rhine, cider, perry and mead, and there was also a large exhibition of honey and bee-keeping apparatus.

The exhibitions in the houses were not of a very high order. Two good but not large collections of Orchids, and some ornamental foliaged plants from Ghent, along with a large quantity of marketable-sized plants, constituted the leading feature, but there was no attempt at an exhibition of specimen plants such as we are familiar with. One of the most gratifying incidents connected with the opening was the presentation of an artistic silver vase to M. Niepraschk by his students, with whom were associated Dr. Wittmack of Berlin as representing German horticulture, and Dr. Hogg of London, as the representative of the Royal Horticultural Society, both of whom felicitated M. Niepraschk on the happy event, as being not only the celebration of the twenty-fifth anniversary of his directorship, but also of his marriage.

In the evening of the opening day there was a display of fireworks in the gardens, and fortunately the weather was fine, but for several days the rain came down in unpleasant earnestness, which interfered much with the preliminary progress of the Exhibition, and reminding us of our own experience at Birmingham, when the tents could only be reached by walking on planks. The Exhibition will, as we have already said, be open till the end of September, during which the objects exhibited will be both numerous and varied.

A WEEK'S WANDERINGS.

IN THE ISLE OF WIGHT.

"WHERE'S Orchard now, and what is he doing?" is an inquiry that has been heard by several readers of these notes during the past six months. Mr. C. Orchard having been engaged as a gardener most creditably and successfully in the neighbourhood of Croydon and Kingston-on-Thames for many years, became well and widely known, and by his willingness, or rather alacrity, to lend a helping hand to his fellow workers or to further any good cause in which they were interested, became highly respected. He was, moreover, and still is, one of the notabilities in the Chrysanthemum world, and there can be few men, if any, who have a more intimate acquaintance with the several varieties and their peculiarities than he has. He was also a pioneer in the cutting-down system near London for grouping, and no more effective arrangements of the plants have been seen than as produced by him at the Kingston National and other shows. Therefore it is that Mr. Orchard became so well known and so popular that interest was manifested in his whereabouts and present occupation. It was known he was somewhere in the Isle of Wight, but by no means known what he was doing. So I thought I would go and see.

It was said last week he was discovered in a delightfully situated house overlooking the bay of Sandown, but that was not quite exact. The "Dark Pasha," for he is no Elaine, was first found prospecting on the pier at Ryde. He seemed to be expecting the steamer from Stokes Bay—Mr. Molyneux arranging that I suspect, for he advised that route from Swanmore, not telling me that I should be met. "Had you come to Portsmouth," observed Mr. Orchard, "I would have met you there, and we could have crossed by one of our steamers to Bembridge, and gone on by our railway to Brading. It would have cost nothing, as I have got a pass for you till the end of the month, and it can be renewed." The words "our" steamers and "our" railway sounded a little strange out of the mouth of a gardener. Some gardeners have a "trap" at disposal I know, if only a vegetable cart with a hamper to sit on, though at least one of my friends in the craft has a carriage and groom; but a gardener with a huge steamer, also a railway at command, was quite a novel idea. I thought of an episode in the movements of a duke and a doctor, and how much better off I was than they were. I think I may tell the story, for it is true. A certain doctor not unknown in the horticultural world, and a noble duke whose name is honourably and deeply engraven in the records of history, went to see a garden, and when they arrived at the station found nothing but a cart with a board across. Without any waiting for the carriage they requisitioned the cart and jogged across the country, enjoying the trip immensely. There is nothing like a novelty for making people contented while it lasts.

But to hark back. The steamer and railway sequel only dawned on me by degrees. When my friend tried to explain things I thought he was joking. To my inquiry as to what he was doing, I was told I should "see in the morning." His answer to the request for the size of his garden was "about 800 acres;" that to what they grew in it, "Oh, 400 or 500 acres of grass, 200 or 300 acres of nothing, 4 or 5 acres of vegetables and flowers, besides, ducks, chickens, rabbits, and 4,000,000 oysters." But I should "see in the morning." Well, I did see stretching out before me a narrow level tract of land about two miles long, the railway skirting one side of it, connecting the station near us with the distant steamers. In this great flat tract were bare patches of blowing sand, a far greater extent of waving meadows, with stacks rising slowly between the showers, the garden towards the end, the oyster tanks shimmering in the sun, and next the sea, on a spur of land, the "Royal Spithead Hotel." Then I began to comprehend. The sea is eating away the land in many places in the Isle of Wight, but here it has been driven back and held back, and what was a dank and noisome morass will soon be rich firm grazing land, and this with the harbour formed by throwing a huge embankment, which forms a broad road, across the valley, developing trade and traffic, will be the reward of the promoters of the great enterprise. The land thus reclaimed is under Mr. Orchard's management. It is his duty to secure the crops and make the still barren patches productive, to supply the hotels with vegetables and flowers, and generally to look after everything that is



FIG. 16.—MR ALDERMAN COLDWELLS, J.P.

not of an engineering nature for his chief and head of the whole huge concern - the harbour, the hotels, the railway, and steamers—Mr. J. C. Coldwells, once a gardener, and with a gardener's instincts still, and now and for a long time an alderman and a magistrate.

Mr. Orchard appears to have nothing to do but ride to and fro in his train and look after his men; but having a high sense of duty he is not the man to let anything go wrong or be lost through inattentiveness. He contrived to get some hundreds of tons of hay in splendid condition—by far the largest bulk and of the best quality I saw in the island. He does not do what some haymakers do in showery weather—spread the grass all over the ground, and prevent it (the ground) drying, but works on the wind-row system—that is, clearing broad strips of ground to dry, then throwing the grass on them lightly, and the strips from which it is removed dry in turn. The quicker the ground is dried in this way and the hay turned back the quicker it is made; and it is a fact that he secured tons in excellent condition when much spread all over the land from which the moisture could only escape by rising up through the hay, and of course not drying, it was spoiled. This is no new plan, but a good old one regularly practised in some districts but not in others. Sheets and pulleys have also been a profitable investment in protecting the stacks in the process of building. So many persons, including gardeners, are interested in haymaking that these remarks may be permissible.

It is astonishing to see the freedom with which not only grass and Clover but garden crops grow in this sea bed of sand. When dry it blows in clouds, and for a time not even weeds will grow in it; but when the salt is drained out and the excess of sulphur dissipated, verdure follows. The upper part of the valley, or that most distant from the sea, has been reclaimed for generations, and no finer grazing land can be found. Animals thrive astonishingly on the herbage, probably because the sand is rich in phosphates. It is as poor to look upon as can

be imagined, yet in the fenced garden Peas are growing as luxuriantly in this bed of sand as if they were in turfy loam trenched 2 feet deep. And it is the same with Cauliflowers, Cabbages, and allied crops, while roots of all kinds—Carrots, Turnips, Beet, Potatoes, are of exhibition quality. Yet no manure of any kind is applied to the land or sand. Individual roots of Parsley exceed 2 feet in diameter, and a beautifully curled and crested leaf plucked off was 10 inches long, not measuring the bare stalk, and 9 inches across. All kinds of flowers that have been planted grow in the same remarkable manner. A respectable armful of Sweet William flowers could be cut from a root, a last year's seedling. It is long since I saw such a display of these good old border plants. The colours of many were extremely rich and the trusses enormous. Stocks and Asters luxuriate, and even Roses grow well in this sterile looking sand. Visitors to the hotel are loud in praising the beauty of the flowers and the quality of the vegetables, the latter they say excelling any had elsewhere. It is certain there must be something good in this sand, or so much that is excellent could not come out of it. I have seen no parallel to this culture except in a field of sand at Knowle Hill, Chertsey, in which Mr. Thomas Sharpe grew splendid crops of the finest of Strawberries year after year without any manure. He probably grows them still unless he has made his fortune and retired from business. Strawberries will yet be seen growing in the old sea bed at Brading, but Mr. Orchard says he must have the bare places covered first, or the sand blowing from them, as it does at times in clouds, would make the fruit gritty; yet it is in the same kind of sand that the crops above named luxuriate. Trees have been planted, forming copses, and have grown with equal satisfaction, but they do not root deeply. There appears something below too strong for them, and the roots, of Poplars especially, run along the surface, some of them scarcely buried, like tightly stretched waggon ropes; and there is one of the finest of fences running across the head of the harbour. It is of Furze or Gorse (Ulex) from seed sown by Mr. Coldwells three or four years ago, and the plants allowed to grow undisturbed; it is a perfect hedge for an exposed position.

The gardening experience of the manager in chief of this great undertaking has doubtless been of immense service, and his strong common sense and knowledge, acquired by practice in ground work, has enabled him to overcome engineering difficulties of no mean order, and to combat the waves successfully, and make a tranquil harbour in which craft of various sizes ride safely. Mr. Coldwells is his own engineer, and has a practical man to carry out his plans, just as Mr. Orchard carries out all other details on the estate relative to land improvement, and cultivation. It will be of interest to give a brief outline of the career of one of the most successful men of the day who has risen from the gardening ranks. Let it be said at once that Mr. Coldwells is not a good gardener spoiled. Prosperity, I sometimes think, has made men uncomfortable when in the presence of their once fellow labourers. They seem scarcely to know what to do with them. To ask them into the dining room would perhaps be making too "free," yet to send them to the kitchen would appear "cold." I have had some curious receptions in my time. It was evident my "hosts' scarcely knew what to do with me. I suppose I always was a little difficult to deal with; but servants' hall or dining room or some sort of a compromise between the two is all the same, though what I least like is the troublesome compromise. There was no nonsense of this kind at Brading. "Come along," says Mr. Coldwells, "we must cross the harbour to my house, and then I am going to run to Ryde in the yacht. Will you go?" "Go, yes; the sea is a little rough, but if it is safe for you it will be safe for me." A boat was hailed for a ferry over; but before we were half across the harbour the water rushed in, rising higher and higher. "The cork's out," shouted the man, but it could not be found. "Pull, or we're in for it," shouted the captain. A third gentleman in the boat turned white, and I felt so, but said nothing. "Pull, pull, your best," was the next shout, "or in we go; can you swim?" I began to think I had done writing, but a few more frantic strokes and we were safe. "The man must be a fool to put off in a boat like that," was the first and not unnatural remark; but we were soon calm again and commenced botanising.

Mr. Coldwells' marine residence is situated on what is called the St. Helens Duver, a large extent of sand hills and hollows clothed with grass, with clumps of Furze here and there, also many wild flowers, all having sprung up after the waves were driven back and further encroachments defied by the strong sea wall. The Duver forms the links, said to be the best in the kingdom, of the Royal Isle of Wight Golf Club. The large hotel is the great rendezvous of the Golfers, and they have a pavilion on the ground. Growing out of the bare sand the Sea Holly (Eryngium maritimum) was conspicuous by its blue spiny crowns, the Great Sea Bindweed (Calystegia soldanella) was attractive by its large barred flowers, the Evening Primrose (Œnotbera biennis) has established itself, and banks and braes are carpeted with the golden and white Stonecrop (Sedum acre and S. album). The Sea Pink (Armeria maritima) forms part of the turf, which in the autumn is studded with the Autumn Squill, Scilla autumnalis. It is curious that all these plants, and many others, should have sprung up in such numbers in the old sea bed, which is now as dry as a rabbit warren. Such are the surroundings of Mr. Caldwell's residence; his other home is at Croydon.

He served as head gardener in situations in Essex, Middlesex, and Surrey, and speaks interestingly of his early career. When a lad he joined the Stoke Newington Gardeners' Society, which held fortnightly meetings, at which essays were read and discussion on them encouraged. The late Mr. McElroy was a member, and Mr. Taylor, who wrote a treatise on the Chrysanthemum. At one of the meetings a Mr. Lamb exhibited Chrysanthemum blooms in a Dahlia stand, cut from plants secured to a wall and protected from frost and wet by an overhanging board. They were the first blooms so staged and caused a sensation. The only named flower Mr. Coldwells remembers was Annie Salter, and this for a very good, if somewhat old-fashioned reason—he "knew a pretty girl of that name." From this stand of blooms sprung the Stoke Newington Chrysanthemum Society. Mr. Coldwells has been an exhibitor at and judge of flower shows, and he established a branch nursery for Messrs. Pridham & Sanders of Croydon, he subsequently became manager of the Croydon Irrigation farm, and eventually bought a partnership in a large outfitting business, which he greatly developed. Having an active mind he took part in public affairs, and for years has been an eloquent advocate in the cause of temperance. He has taken great interest and worked successfully in the preservation of footpaths, open spaces, and commons. He has sought by long endeavour to improve the habits and elevate the minds of the working classes. He was an active member of the Croydon Local Board of Health and largely instrumental in obtaining a charter for the town, of which he became one of its first aldermen and a magistrate. I once had the pleasure of hearing Mr. Coldwells speak at a dinner after one of the Kingston Chrysanthemum shows, and can understand his power in debate. I did not know who he was then, but there was no mistaking his being a gardener. Finding him in the Isle of Wight was a surprise. He is a magnate of land and sea there, the man for a great enterprise, and who succeeds in everything he undertakes. But perhaps his greatest trial is before him, in a Parliamentary contest. Though a political nondescript I hope I am loyal to my craft, and if I had the casting vote in two constituencies and could put genuine gardeners, a Whig and Tory, in, I would do so, then ask them to dance the Tullochgorum. Thinking some readers might like to see the portrait of a gardener who has made such an advance in life, I ask for the insertion of that of Mr. Alderman Coldwells.—A WANDERER.



RESULTS OF RAIN.

I DO not know whether others have noticed it, but it is worth observing in respect of Rose plants the wonderful amount of wood they have been and are making. Notwithstanding, or rather in consequence of, the constant rainfall, I have had and am having, now in the middle of August, such blooms as I can never remember at this season. Many are coming truer than ever before, and for clearness of colour quite exceed the July Roses. I doubt not other people are recognising the same. If the wood can only ripen it can hardly be doubted but that there will be excellent material for next season. As a compensation to other and disastrous results, it would seem as if this summer soaking has a valuable effect upon the growth of trees and bushes. I observe a second blooming upon Reine Marie Henriette and others of very unusual excellence.—A. C.

ROSE HER MAJESTY.

I WILL excuse Mr. W. R. Raillem making any apology to me in behalf of Her Majesty. I think it must have been some other friend whom he bantered in his pleasant way on the occasion of Mr. Bennett winning the gold medal with Her Majesty. That was the first time I saw the variety, and then and there took a dislike to the Rose individually and collectively, much to the surprise of my friend Mr. Curtis of Chatteris, who went into ecstacies over it. But to show how I respect the opinions of others whom I deem wiser than myself, when the Rose came into commerce at last I bought six extra sized plants in pots of Mr. G. Paul, and turned them out into the open ground in May. They did not bloom that season, 1886. I budded from them, and have now about a dozen plants, but have not had more than three or four blooms this year. I have plenty of mildew on them. The habit of the Rose, though vigorous, is ugly, and no Rose in cultivation as an exhibition Rose has so many or such thick thorns. Would the most gushing young man (I am elderly) venture to present a bloom of Her Majesty to his tender rosy-fingered Aurora? He would be a barbarian. No, I do not like Her Majesty, but just tolerate her for the chance now and then of getting a bloom such as Mr. E. B. Lindsell showed at Darlington. Alas! I was not there.—F. H. G.

P.S.—I think the Rose I so praised was Queen of Queens, but that Rose too has quite disappointed me.

ROSES IN WINTER.

THE production of Rose blooms from the time they fail outside up to Christmas had only passing notice on page 429, last vol. The declining months of the year may safely be regarded as the most difficult in which to maintain a supply of blooms. But this may be accomplished if free-flowering, good growing varieties, such as Safrano and Isabella Sprunt, are chiefly relied upon, and plants prepared for yielding blooms at that period. I cannot say that blooms could be profitably grown from a market point of view, because it is next to an impossibility to produce

those that would possess the requisite colour and size to be saleable during those months. For home use, however, delicate buds in quantity may be had if a house is devoted to their culture. Few flowering plants will yield a return that will be more highly esteemed.

Two courses are open for the attainment of this object. The one is to grow the plants exclusively in pots, and the other in pots up to a certain stage, eventually to be planted out. For years we followed the former, but prefer the latter, not solely on principles of economy, but because the plants that will be recommended for the purpose have youth and vigour on their side. Young plants worked in spring or rooted from cuttings are suitable for this purpose. Plants on their own roots are decidedly the best, because they push up more freely from the base, although the former may be resorted to if wood for cuttings is not available. If the plants are to be grown in pots they should have the treatment described for young plants up to the middle of September, when they may be allowed to make growth and form buds. For planting out, cuttings must be rooted in February, and potted twice, first into 3-inch and finally into 5-inch pots. If the plants are grown in heat until the middle of June they should be gradually hardened, and placed afterwards in cold frames with a fair amount of ventilation until the end of July or early in August, when they should be planted out. From that time small Melon houses or similar structures can be set at liberty, and are admirably suited for the purpose. Some of the soil in which Melons have been grown can be removed, and leaf soil moderately rough may be added to nearly one-half, with about one-seventh of horse droppings or decayed manure. A few wood ashes may be added ; they will do no harm, but the reverse. Old Melon soil is only given as an illustration. If good loam can be used it is preferable, but it is not necessary—in fact, the short time they are intended to occupy this position soil that has produced another crop will answer the purpose very well indeed. The soil need not exceed 6 or 7 inches in depth.

A large number of Roses can be planted out in even a small structure, as the beds may be filled to start with, and the more turned out the greater the quantity of flowers that will be produced. Planting moderately thick without unduly crowding is advised. The plants should be turned out without breaking their roots, and in ten days or a fortnight they will be rooting freely in the light soil surrounding them. Keep them close for a time after planting, and then carefully but liberally ventilate until the middle of September. As the temperature decreases both by day and night admit no air to the plants. The plants will grow freely, and push up strongly from the base by the end of October. If the temperature at night is kept about 55°, they will continue growing, and flower profusely up to Christmas ; in fact, we have had them continue until the end of January, when it has been a pity to remove them, for the blooms have then increased in size and colour.

What is to be done with the plants afterwards depends upon circumstances. If the house is wanted and blooms from other sources are ready to meet demands, they should be kept cool to harden them, when they may be lifted and stored in frames to be planted outside in February. If it is decided to pot them, they can be lifted with fairly good balls of roots, placed at once into 7-inch pots, and stood in a cool house or cold frame. Under any circumstances frost should be kept from them for a time. They should rest until the middle of March, and then be pruned closely back, nearly level with the surface of the soil, and allowed to break into growth under cold frame treatment. These plants need not be followed further, for they can either be grown for culture in pots to flower again in the autumn, or, better still, for flowering in spring the following season. To save the labour of raising young plants, they can be retained in the 7-inch pots and planted out again for flowering up to Christmas, but should not be kept after the second year. Persons wanting blooms at that period, and not having prepared for the purpose, may purchase worked Roses now in 5-inch pots, and plant them out as detailed.

Rose blooms can be had from plants established in pots if they are started early in the season, so that a good growth is well matured by the middle of June, when they may be repotted if they need it, and the thin puny growths removed by the middle of August. The plants will then break into growth, and have formed quantities of flower buds by the time it is necessary to house them. By close genial treatment indoors the plants soon break into growth, even while producing the flowers that are set outside, and flower freely up to Christmas. But when plants are confined in pots for several years, and subject to flowering at that period, they soon become weak, and need a season's complete rest to recruit them. How to recruit exhausted plants will be more fully dealt with in another contribution.—Wm. Bardney.

THE CHISWICK APPLE AND PEAR CONFERENCE.

A SCHEDULE and circular of the Conference to be held in the Royal Horticultural Society's Gardens at Chiswick, October 16th to 20th this year, have just been issued. The schedule enumerates thirteen classes for Apples, one each for fifty, twenty-four, and twelve varieties, with four others for twelve and six varieties of dessert and culinary varieties respectively, the others being for Apples from cordon, bush, or pyramid trees, standards in orchards, Pear trees on pyramid stocks as grown and sent to market, and for new varieties. To Pears ten classes are devoted, arranged in a similar manner, but the largest class is for thirty-six varieties. No mention is made of prizes or medals.

In the circular the following particulars are given :—

"In consequence of the great success of the Apple Congress in 1883, and the Pear Conference in 1885, and in order to bring up the reports then published to the present date, the Council of the Royal Horticultural Society has decided to hold another Conference on Apples and Pears in the Gardens at Chiswick, from the 16th to the 20th of October next. In the previous conferences it was held desirable to secure the representation of every variety of these fruits in cultivation, whether valuable or otherwise, so as to arrive by comparison at an estimate of their worth. This having been done, and duly recorded in the published reports, it is not now considered necessary to go over the same ground again. In the present Conference it is proposed to invite the exhibition of such varieties only as find favour, or may be considered thoroughly worthy of cultivation.

"One object of this Conference is to illustrate by facts and examples the present state and future prospects of commercial fruit culture in this country. It is consequently desired that contributors should endeavour as far as possible to furnish samples of fruit that are in favour in the markets of their several localities. All fruit growers are invited to exhibit, and the more widely the collections are procured (within the limits of the schedule), the greater the interest the exhibition will create. It is very desirable that every collection should be accompanied with as much information as possible with regard to soil, exposure, and physical condition of the districts in which they have been grown ; for which purpose the accompanying forms are enclosed. All fruits exhibited should be distinctly labelled with the name or names under which they may be known, and as the specimens sent are strictly for examination, they must necessarily be at the disposal of the Committee if required.

"Persons willing to contribute papers bearing upon the subjects in hand are requested to communicate with Mr. Barron at an early date, stating the particular subject they are prepared to treat of. Arrangements for reading or publishing papers will be made by the Committee. All packages should be addressed to Mr. A. F. Barron, Royal Horticultural Gardens, Chiswick, and must be delivered on or before Monday, the 15th of October. Exhibitors staging their own fruit may do so on the 15th or on the morning of the 16th, to be ready for the inspection of the Committee. Notice of intention to exhibit must be given not later than Wednesday, 10th of October, stating the class or classes in which it is intended to exhibit, or the amount of space that will be required. All exhibitors will be admitted to the gardens free, and will receive a certain number of tickets, according to the extent of their exhibits. It is recommended that heavy packages be sent by goods train."

MAKING IMPROVEMENTS.

On reading the article in No. 2073 (June 21st) of the Journal on the "Duties and Difficulties of Gardeners," many thoughts flitted across my mind. I thought of old associations, and many incidents of early life came vividly before me. Thoughts of old friends, successful friends, and unsuccessful friends. Some appeared to flourish and thrive go where they would. On the other hand, some always seemed to find uncongenial surroundings ; although they appeared to strive hard and keep on the road to prosperity, yet there always seemed to be a something to frustrate their endeavours. That the article by "An Old Servant" contained some trenchant and practical sentences must be readily admitted ; but the genial ring which pervaded it, and the excellent advice given throughout, made it most instructive and readable. At the same time not a few gardeners were "hard hit," and I for one have not the least objection in stating that some of his thrusts went straight home. But to return to the heading of my paper. After nearly thirty years' experience in the busy world of horticulture I have had some ups and downs, and have seen many who were considered good men fail, and even fall, when a few moments' serious thought would have saved years of toil and trouble. Some have failed at one obstacle and some at others ; some from being too precipitate, and some through want of energy ; whilst not a few have blundered on the subject of this paper—"Making Improvements."

It is a fact tolerably well known that in many instances on a gardener taking charge of a new situation he is not slow to find, or at least attempt to find, fault with his predecessor, and his inauguration of his new office is marked by a continued agitation for alterations, or, as he is pleased to call them, improvements, when at the same time his employer is very reluctant that the existing state of things should be materially disturbed. With elderly persons, more so than with younger ones, a disposition is often evinced to retain all the old associations of their homes as long as possible, and I think in such a case a gardener should do all that he can towards keeping the place in a satisfactory state on the old lines to which his employer has become attached. I was in charge of an old garden some years ago, and not being satisfied with one part of it, I had the temerity to suggest an improvement, but was met with a mild rebuke that has lasted me to this day. It was an intimation that when the owner wanted improvements of the nature suggested, which involved cutting down trees and planting, he would take me into his confidence and say what he wanted, as he added, "I shall most likely have to pay." It may be readily inferred that if I

thought improvements necessary after that I was careful not to express such thoughts to my kind and considerate old master, with whom I stayed till the day of his death.

It is doubtless a mistake for a gardener to insist on so-and-so being done, especially when he finds his employer is opposed to it. Better to go on in a quiet way and make the best of existing arrangements than to be perpetually grumbling. Many vacancies have been caused by a few words spoken without sufficient thought on the resources at the command of a gardener being of such a primitive nature. On taking charge of a new situation it should be a gardener's business to find out, by casual conversation with his employer, or by direct questions, whether or not alterations are desired, and then act on the answer returned, and from which useful hints may often be derived. A continual grumbler is likely enough to become a trouble to an employer, and sooner or later the partnership will be dissolved, when by a little thought and tact on the gardener's part he might have had a comfortable home and creditable employment for many years. I have in the course of experience observed many changes made in gardens ; many have been decided improvements, and are at the present time standing proofs of the gardener's ability. But there are cases of the opposite character. Fine trees, ornaments to any place, and splendid shrubs, specimens that many would give much to possess, have been destroyed, all for the sake of making a change and producing a new effect that did not approach in dignity the old.

Fine old trees and specimen shrubs are not the production of a day, and I know of few subjects in gardening that require and are deserving of more serious thought than the destruction or preservation of such. Alterations and improvements in any department are not matters to be trifled with, and all such should be carefully thought out in detail before operations commence. That there are many gardens where much improvement is needed I am well aware, and it may be that the owners of such are equally aware of the fact, and also probably aware where the expense of such improvements will fall. Moreover, the owner of an estate has lived a long life and become so accustomed to his home surroundings that the gardener would meet with a poor reception in case he advanced any improving ideas. But, after all, as has been said, gardeners and servants should try and do what is right and in accordance with the wishes of their employers. If improvements are desired in the gardener's charge he should set about them in the best way that he possibly can. If, on the contrary, he finds that such changes are not agreeable he should not be continually finding fault on that score, but try and make the best of existing circumstances, and he will then be more likely to gain confidence and feel himself secure in his home.—ANGLIAN.

NOTES ON EARLY ENGLISH HORTICULTURE.

(*Continued from page 461, last vol.*)

BEFORE quitting the subject of Roman influence on English horticulture exerted during the centuries when our island was a province of the mighty empire that has never had a successor, a few more facts may be noted which have some bearing upon the history of horticulture in these islands. That there followed a period of depression after Rome gave up the sovereignty is certain, but if the men went many of the plants they brought here remained and propagated themselves far and wide, till after generations wondered how they had arrived and from whence they came. As the Grape is the principal berry of Italy, even to the present day, doubtless this was one of the first fruits introduced by the Romans, and they had many varieties, some vaguely described as thick-skinned and thin-skinned, long-berried and round-berried, and it is at least probable that some of the vineyards well known in the Middle Ages, and which have left their impress in the names of places, were composed of Vines descended from Italian stocks. And the Vine was cultivated with much attention, almost enthusiasm, as was the Olive. If the Romans experimented with the latter in England their success would be limited, though Miller asserts that trees placed against a warm wall at Kensington grew well and produced fruit in 1719. And there are Olives which have stood the open air many years in the mild climate of Devonshire.

It would seem that the principal fruits introduced during the Roman period were the Almond and Fig from Syria, the Citron from Media, the Peach from Persia, the Pomegranate from Africa, the Apricot from Epirus, the Cherry from Pontus, Apples, Pears, and Plums from Armenia. At least one kind of Apple, perhaps more, grew in Britain previously. Of these only a part would, if exposed, yield fruit, owing to the coldness of our winters, unless the climate was more equable formerly, as some argue, but the evidence is shadowy, except that the extent of forest and marsh was much greater than now ; our climate was certainly more moist, perhaps hotter in summer. Of Apples it is reckoned that the Romans knew about twenty-five kinds ; of Pears more, thirty-five or upwards, distinguishing those suitable for eating and for cooking. Their Plums are classed as black, white, and mottled, there being several varieties of each, one evidently our Prune. At least eight kinds of Cherries, one too tender when ripe to bear carriage, another small and hard-fleshed. Only the black Mulberry was known to the Romans, and no varieties of the Peach or Apricot are mentioned. Of Chestnuts they had six sorts. The Walnut was valued for its fruit, called sometimes the "food of the gods," and they cultivated a kind of Filbert, the fruit of which they ate baked or roasted. Strawberries the Romans seem to have had, but the heat of Italy did not suit them ; history fails to tell us whether they took under cultivation the British Hautbois. The Quince and the Medlar were grown, but not particularly esteemed ; our other fruits were unknown. In their kitchen gardens the Romans had many plants familiar to us, afterwards forgotten in England through ten centuries nearly, except where a few of them happened to be cultivated by the monks. Our leguminous vegetables, our esculent roots mostly, the Brassicas, the savoury Alliaceous tribe, various salad and sweet herbs, were not only grown by them, but they received the personal attention of the Roman gentlemen, whose kitchen gardens were sometimes almost extensive enough to be called garden farms. Prominent favourites were the species of Gourd, which occupy a position between fruits and vegetables, such as the Cucumber and the Melon. It was one of the odd superstitions of both Greeks and Romans that these plants disliked the presence of the female sex, hence women and girls were cautioned to keep away from the beds where they were growing. But on the other hand, women might be of some use, for it is stated by Democritus that when a plot of land is infested with caterpillars if a woman go round it three times barefooted, and having her hair hanging loose, they will die. I wonder whether it has occurred to anyone to try this "insecticide" during this prolific caterpillar season. Evidently the Roman gardeners had great faith also in the doctrine of lucky and unlucky days, and even hours ; thus they advised that Beans should be gathered just before dawn, and Vines always pruned at night if the crop had been a failure. Then there were notions current as to what operations should be performed in the increase of the moon, and what in its decrease. Perhaps these might not be altogether so foolish as may appear at first, for I have spoken to gardeners who think the moon has some influence upon vegetation ; but it would require careful and repeated observations to ascertain about this. Fond as the Romans were of flowers, while their sway extended over Britain they had not many species so far as we can tell, but they were grown freely. Lilies, Hyacinths, and Roses were prominent, also some showy Composite plants of doubtful identification, perhaps our Aster and Marigold ; with Rose bushes the walks were often bordered, and they were also grown in clumps. As there rose a demand for Roses out of season Pliny says the gardeners hastened their development in spring by the application of warm water to the roots. The passion for a profuse display of Roses is stated to have come from Egypt, where at entertainments people strewed their rooms with the entire flowers (or the petals) to the depth of more than a foot. No scientific arrangement of plants was attempted by the Romans in any of their gardens, but they were accustomed to place plants used for medicine or flavouring in beds by themselves, apart from other species.

Curiously enough the departure of the Romans from Britain did not finally extinguish the influence of Italy upon our horticulture, as after an interval this was renewed by the doings of the ecclesiastics, amongst whom there was always a good per-centage of Italian foreigners. This occurred in two ways—firstly, by the diligent cultivation of a variety of plants in the monastery gardens, where the pursuit relieved the tedium of cloister life, and many species were kept up from century to century which were well-nigh unknown to the outer world ; and secondly, through the visits paid to England by a peculiar class of religious men, the palmers, about whose history most of the dictionary-makers show themselves ignorant. We get the clue to it from the fact that some hairy caterpillars were called by our ancestors "palmer worms," because they seemed to be always wandering about. A pilgrim went a specified journey and returned ; a palmer spent his life in going from place to place, and often carried a branch of Palm, but as old historians tell, he also not unfrequently brought to these western lands seeds or fruits obtained while he wandered in hotter climates, and described the plants he had observed there.

The three Saxon tribes dwelling on the shores of the North Sea who sent parties of emigrants to Britain in the fifth century were not likely to favour the advance of horticulture at first. In one particular, indeed, they followed in the footsteps of the Romans, for they were diligent growers of corn, and it was still largely produced in Britain, where, under Roman management, the island had raised so much grain that it was sent to countries on the

Continent. But of flowers and fruit the Saxons took no heed, if they cultivated some of the commer vegetables, their leaders thinking that any of these peaceful arts would lessen their warlike enthusiasm, hence they had devised a law that those who tilled lands should exchange them with others at the end of each year, a plan which was decidedly unfavourable to outlay or improvements. It is probable the Saxons introdueed from Germany one or two heads of Cabbage or Kale, these vegetables being favourites with them. The old Saxon name for February means "Sprout-Kale," referring to the fact that about this time the sprouts formed on the winter stems were fit to cut. The love of Brassicas amongst the Germans is still further exemplified by the circumstance that in Scotland, where many of them settled, the people have even to this day remained steadfast to vegetables, which has given the country its repute of being the "land of Kale."—J. R. S. C.

ANTIRRHINUMS AND PENTSTEMONS.

The former are much later than usual, and scarcely so good as during a hotter season, but the Pentstemons are very fine, both as regards the spikes and the size and colour of the flowers, a showery summer evidently suiting them well. Both ought to be lightly supported by stakes, and if the old spikes are removed as soon as the flowers are shabby this favours a better supply of flowers from side shoots. The surest way of perpetuating any superior varieties is to propagate by cuttings, these striking readily, and may be easily wintered. Short flowerless shoots may be slipped off the old stems near the ground and at once dibbled into handlights set in a cool and somewhat shady position, or say at the foot of a north wall. They ought to be kept rather close, shaded and watered as required, and when rooted have the lights kept off them. If rooted early, or before September, the plants may be placed out and wintered in the open borders, or better still, in beds, but those struck much later ought to be treated more like Calceolarias, being wintered under glass, given plenty of air, and protected from severe frosts. These may be planted out early in the spring and will flower strongly during the summer. Many beautiful varieties of both Antirrhinums and Pentstemons may be obtained from a packet of seed of each, or seed may be saved and at once sown in preference to waiting till the spring, when so many other plants require the room and attention. It should be sown on the surface of a pan of previously moistened fine sandy soil, and be lightly covered with more of the same. Set either in a handlight or on the ground in a cool position, and covered with a square of glass, the seed soon germinates, and when large enough to handle the seedlings ought to be dibbled out thinly in boxes or pans of fine light soil. They soon become large enough to transfer to the borders, the better plan, however, being to keep at least half the plants under glass, or where they can be lightly protected and taken care of during the winter.—W. I.

THE COMMERCIAL REALISATION OF FRUIT.

(*Continued from page 127.*)

JAMS.

The manufacture of jams furnishes a valuable outlet for a large quantity of fruits, but for the small farmer it forms the lowest remunerative outlet for fruit. It is a system that is attaining considerable proportions in a few districts, but they are so few that they are as a drop in the ocean of our fruit supply, and the total quantity of the crops absorbed in this direction is remarkably small and must remain so. To make jams profitably requires capital and experience, both to produce the article and to dispose of it. To produce the goods on a large scale an outlay is necessary for sugar, jars, labour, cases, &c. To make a sale for a quantity it is necessary to educate the public with a knowledge of the quality and character of the particular goods, and this involves an immense expenditure of money, time, and labour, a matter that no farmer can carry through upon its legitimate basis for an ordinary crop. Unless a farmer is prepared to do this work and incur the incidental expenditure, he must be prepared to send his goods into the ordinary outlets of commerce, and then they enter into competition with the so-called jams or fruit preserves that are made up and sold to the public at low prices, which the trade know, that although they bear the name of almost all fruits, are simply made of Apples, and very poor Apples too, the different flavour of the fruits being supplied by chemicals, the "seasoning as does it," very much on the principle of Sam Weller's sausages. Coming into competition with that particular class of goods, the small farmer engaged in jam operation stands but a poor chance of making a profit. Should, however, a body of farmers club together to make jams, the very fact of their organisation would give their goods a standing and value in the market, although they might find that the same labour and expense incurred in preparing the same goods as high class dessert fruit and sweetmeats would result in much speedier and more profitable sales. Crystallised and glace fruits retail at from 1s. 3d. to 2s. the lb. They do not absorb so much sugar as jams. Evaporated Apples sell wholesale at 6d. per lb., equal to 3s. 6d. per bushel, they are retailed at 10d. per lb., equal to 5s. 10d. per bushel. At 10d. per lb. the prices range with green Apples to the consumer at 1½d. per lb., so that it will be seen that there is an abundant margin of profit for those engaged in their manipulation.

WHAT TO DO TO MEND MATTERS.

The one essential step necessary to create an improvement in the present unsatisfactory condition of things is for fruit growers to combine in their own districts, and form a union for the provision of a regular supply of fruits that may be prepared and realised under the supervision of themselves, and by the direct control of their own representatives and managers. Such organisations should take the shape of the co-operative societies that the working men of the country have formed in every direction, which have proved simple in formation and effective in working. It may be safely said that the lines that the industrial classes have drawn for their co-operation to buy may be rendered equally available for the producers of the nation, who should co-operate to sell. It must be borne in mind that the co-operative stores in each district are perfectly self-contained, conducted, and localised, so that the management of each society is entirely in the hands of those of the members in the locality. Yet each of these stores is affiliated with a central organisation composed of the delegates from each society, that effectively purchases in bulk all the goods that the societies require in detail. To such an extent have these organisations grown that they now number 1450, and the aggregate purchases made by their members last year exceeded the enormous sum of £32,000,000. This immense concentration of buying power that the working classes have created for themselves is something for the producers of the country to look forward to, and they should make every effort to secure the share in that trade that is available in their direction. Desires have been generally expressed of the necessity of producers and consumers getting more within touch, and middlemen done away with as much as possible. The problem has been frequently tried, and failure has been the inevitable result. The solution of the problem will be found in this direction: Producers must co-operate to sell, and when they have their organisation formed on the same lines as consumers they will be able to approach each other officially, ascertain each other's requirements, and much trade will be the result.

To refer practically to the subject which we have met to consider, I may say that the fruit farmer must largely gain by the co-operation and assistance of commercial experience, as from the nature of his crop benefits are obtained in every direction by the organisation which is the outcome of it. The season for each particular kind of fruit is very short, and markets in every direction require incessant watching to note the changes that take place. Fruits vary in character, quality, and condition greatly, and particular kinds can be best dealt with in different directions. Again, a sudden change of weather will in one night so affect a large quantity of fruit that it must be immediately dealt with or its value is lost, while a few days' bright sunny weather may quickly ripen a crop and bring it so forward as to render it necessary to market it immediately, when by glutting the market its value is materially depreciated. These are contingencies that it is necessary to provide against, and only by commercial organisation and combination can this be done effectively and with profit; but no individual farmer can possibly provide against these contingencies by himself, for if he provided against the whole he would require an enormous organisation that his own crop could not profitably utilise continuously, and if he secured himself against a portion of the contingencies the chances are, that as the unexpected always happens, circumstances would arise against which he was not prepared. Then, again, the bulk and weight of fruit is enormously great compared to its value, and the cost of its transport is extremely heavy in comparison with the amount realised. Commercial experience and organisation would offer facilities for beneficial arrangements being made for the conveyance of fruit to its destination that isolated working could not command, and it would also enable a simpler and more direct system of distribution to be carried out. It may be noted that every saving effected in this direction, being an addition to the profits and tending to the advantage of the grower, the larger the combination the greater are these benefits likely to be.

(To be continued.)

ARTIFICIAL MANURES.

The latest remarks of Mr. Coombe on the above familiar subject came as an agreeable surprise to me; the tone maintained was distinguished by moderation and reason, the writer having evidently satisfied himself that a judicious combination of science, practical experience, and close observation must form the keystone to future horticultural successes. My desire for a ray of light to disperse the darkness in which I have for some time been groping to find out the way in which your correspondent would put his theories into practice, has met with a generous response, and not only a ray but a perfect flood of light has been given which is highly satisfactory in many respects. My opponent in describing his mode of procedure in preparing suitable plant food shows us that his methods differ but little from those usually practised. Instead of a host of mysteriously wonderful and minutely proportioned compounds, we have simply placed before us the usual potting materials, such as loam, leaf soil, lime, sand, charcoal, and (mark the elastic term) artificial manures. We are also treated to the candid admission that in compounding these mixtures for plant food, if the mind is well stored with knowledge, it matters little whether gained by scientific research or experience and observation. Exactly, this is the point I have been

endeavouring to uphold throughout this discussion, by showing that although I fully believe in the great help science is towards the attainment of the object we have in view—viz., that of producing the best results by the simplest means, yet we must not set too high a value upon mere scientific knowledge, for the simple reason that unless scientific research is conducted with mathematical precision from beginning to end, its teachings are often misleading. Now, this cannot be done in ordinary practice, but must be left to special investigators to find out how far it is really essential to supply to plants the constituents of which they are built up; practical men will then not be slow to seize upon that knowledge and turn it to good account.

Mr. Coombe seems to have taken a decided objection to my use of the words minutely and nicely proportioned combinations, but at the same time admits that a properly proportioned combination would be a minutely proportioned one in a certain sense, but not in the way I have tried to maintain. Now, he has already given us an idea of the way in which he would find out what is a properly proportioned combination for particular plants—viz., by analysing the ashes and thereby calculating how much potash, lime, phosphoric acid, &c., is contained in a given quantity; these are some of the principal constituents, but in addition to them there are numerous other elements present in varying degrees in each particular plant. Now, the question is, How far is it necessary to supply these minor constituents with increased results? I believe it is quite possible to, from a scientific point of view, to manufacture a food containing all the elements, exactly proportioned as in plants and fruits, but as some would have to be given in a soluble and others in an organic form this proportion would not continue so for long, unless the soluble constituents were repeated at intervals, for reasons I have previously given, that certain elements are fastened up by the soil, and can be retained for future use, while others are not. Another important point that should be kept in view is, that before we can claim to be able to compound a really "properly proportioned combination," on the lines indicated by him, we must analyse the natural substances used, considering how extremely varied soils are in different localities. For this reason I cannot admit that in practising science by halves he is acting on lines so superior to what he chooses to call the haphazard system. And although I still believe that for practical purposes these minutely or so-called properly proportioned are not necessary, so long as the principal constituents are present, yet I should not for that reason think of consigning to the flames the works I have quoted from. On the contrary, I intend to add to their number, as I am a firm believer in steady and continual progress in my walk of life; and in regard to the usefulness of chemical knowledge to gardeners, I consider the true course to pursue is to find out the dominant forces that regulate plant life, and to use them in a simple and practical manner. Another proof that these compounds, as advocated by my opponent, are not necessary, is proved by the fact that some kinds of artificial manures are equally effective for plants that differ as widely as plants can do in their chemical constituents, as, for instance, Chrysanthemums and Azaleas. I fully believe with my opponent that in any occupation in life the key note to success is found in strict attention to details, but I would add, first find out that those details are really necessary, as trifling attentions, commonly known as facts, are better left alone.

With many of Mr. Coombe's remarks on the lime question I cordially agree. In regard to his disappointment at not receiving a note based on my practical experience, let me inform him that knowing the high value he sets upon scientific authority, I thought I would give him the scientific explanation first, and reserve the practical note for the next addition. We have not differed materially throughout this controversy as to the effect a dressing of lime would have upon a soil abounding in humus. The point he seems to be at variance with me is that carbonate of lime has the power of retaining moisture for the use of the future crop; and although I must admit that he has treated this subject in a thoroughly impartial manner, as he finds out that a scientific study of the action of lime would have some slight effect in causing more moisture to be retained, but considers too much stress should not be placed upon its usefulness in that direction, because in his opinion there are other and more powerful agents, such as humus, comprising organic remains, salt, nitrate of soda, &c. I am not prepared to say that those substances would not be equally effective on a sandy soil, and in the case of the former would be valuable for using in conjunction with the lime, and I am inclined to agree with my opponent, that it would not have as profitable an effect in causing a sandy soil to become more retentive as it does on heavy land in making it less retentive, for the simple reason that when used on heavy soils it neutralises the acids, which renders them unproductive, in addition to the mechanical action it would have when its chemical properties had been transferred to the surrounding soil. But notwithstanding these facts, lime is well known to be of considerable value in promoting the fertility of almost any kind of soil, if the right kind is used. When converted into chalk it contains a large percentage of phosphate of lime, which is a constituent of all plants. If Mr. Coombe will try the effect of an application of lime to a sandy soil, I think he will find he has under-estimated its value as a means of imparting to the soil the power of retaining moisture. I have on more than one occasion noticed this effect—although I must admit the soil was not particularly sandy, but still very light. A moderate dressing of chalk was given at the winter digging, and during the existing summer, when the soil was again dug, an examination of numerous small pieces of chalk showed them to be soft and moist when pressed between the fingers, and in many cases with small particles of roots clinging to them.

Your correspondent's explanation in reference to my statement that "while certain elements are absorbed by the soil and only given up again in small quantities others remain freely moveable, and a residue not quickly taken up would be wasted," has the advantage of originality if not of correctness, and it is about as definite as describing the geographical position of London by saying it was somewhere between Dover and Newcastle. By arranging extracts from my previous articles side by side he in reality supports the arguments he intended to contravene. "If the food administered does not contain the right proportions those elements in excess of volatile would be lost." Certainly; and herein lies the difficulty of manufacturing perfect and economical plant foods when some of the elements have to be given in a soluble form, because they are assimilated more quickly than the insoluble elements, and consequently the plants have to go short of these elements till a fresh supply is given, while they have still within their reach a plentiful supply of those substances that are not so evanescent. I maintain that this clearly shows that the best course to pursue is to give the solidifying agents in excess, because the residue would not be wasted, and supply the volatile ones at intervals as circumstances show they are required. I think it must be a slight oversight on the part of my generally shrewd opponent when he quotes from your correspondent, "B," in support of his own ideas; for although that writer says, "I think it is possible to produce a perfect plant food," he also goes on to say that, "Any scientifically composed food is sufficient for any plant requiring help in that way. It is quite possible, no doubt, that there may be in the composition something which is not required for every plant; but this is a matter of no importance so long as what the plant does require is present in fair proportions." This part of the quotation is altogether opposed to the views put forward by Mr. Coombe where there is the independent support he claims to have in support of his views; and whether my opponent's arguments or my own have carried the greatest amount of conviction with them I am willing to leave to the unbiased judgment of the numerous readers of this Journal.

Before concluding I will add that so long as those engaged in controversial subjects are guided by the admirable sentiments expressed in the concluding paragraph of my opponent's article they will, I venture to assert, perform a useful purpose without wounding the susceptibility of either, and also tend to promote in each a wish to become comrades instead of opponents.—H. Dunkin.



NATIONAL CHRYSANTHEMUM SOCIETY.

The Hon. Secretary of this Society, Mr. Wm. Holmes, in issuing the members' tickets for the present year, calls attention to the extension of the programme, especially by the Provincial Show, to be held in the Corn Exchange, Sheffield, on November 16th and 17th. He also adds that "This additional item is arranged without any increased charge on the members. I hope, therefore, we may receive a large accession of new subscribers during the season, and so justify this fresh feature and re-imburse the Society the very considerable extra cost this Show and the new classes in our schedules will of necessity entail. The usual arrangement for 1s. admission tickets for non-members (available for any day throughout the year) is again adopted. I have a supply in hand, and it is as essential as ever that all friends intending to visit either of the Shows should avail themselves of them. By doing so our Society benefits, 50 per cent., but we do not share in any cash paid at the doors. These tickets may be had on sale or return, but any not sold must either be returned by November 24th, or paid for. The new catalogue is now in the printers' hands, and will be ready for sale early in September. I shall be pleased to forward copies in the order of application, 1s. 1d. post free."

SEASONABLE WORK.

Chrysanthemums.—With the exception of the dwarf early varieties all Chrysanthemums ought to be kept staked and lightly tied up, otherwise the principal branches either break down or gradually bend to the ground. Once partly broken or allowed to become crooked they cannot well be again neatly staked upright, and it is very certain flowers produced near to or quite on the ground are of little value. All that is wanted is a fairly strong stake to each main branch, allowing the side shoots to grow out and flower in a natural manner. This will be found a far better plan than bundling a number of branches together only to spoil each other. Chrysanthemums are essentially moisture-loving plants, and if fine dry weather continues they will pay for a little attention in the way of watering. First lightly loosen the surface of the ground with a fork, then give a good soaking, and mulch with leaf soil, short manure or strawy litter. Liquid manure of some kind and not too strong may well follow the first soaking with clear water, and will be of much benefit to plants rooting in poor soil. Chrysanthemums can be potted readily from the open ground, but not from very hard and poor soil, nor are they of much service if allowed to become crooked. Stopping ought long since to have been completed

once or at the most twice being sufficient, or all that is advisable. Among summer-flowering varieties La Petite Marie, both white and yellow, are little gems, and St. Mary is still one of the best.—W. I. M.

A PROPOSED TRIP TO EGHAM.

Last year an arrangement was made for a visit to Messrs. Cannell and Sons' nursery, Swanley, by members of the National Chrysanthemum Society with their friends, and the excursion proved such a pleasant one that Mr. Holmes was requested to plan a similar trip for the present season. This has been effected, and Baron Schröder having given his permission for the party to visit the gardens and houses at The Dell, Egham, the excursion has been fixed for Friday, August 24th. The party will assemble at the booking office, Waterloo Station, at 12.30 P.M. The train is timed to reach Egham station at 1.40, whence the visitors will proceed to The Dell, returning to tea luncheon at the "Angler's Rest Hotel" at 5 P.M. The return train leaves Egham at 8.30 P.M., due at Waterloo at 9.29 P.M. The cost, inclusive of railway fare and luncheon, will be 4s. 6d. each, and all desirous of joining the party should communicate with Mr. W. Holmes, Frampton Park Nursery, Hackney, by August 21st.

Notes & Gleanings

Events of the Week. — To-day (Thursday) the Maidenhead, Aberdare, Ludlow, Abingdon, and Taunton Shows will be held. At Exeter the Summer Exhibition takes place on Friday, the 17th, and the Co-operative Society's Show at the Crystal Palace, on Saturday, the 18th inst. The Shrewsbury (two days) and Newcastle-on-Tyne (three days) Shows will be opened on Wednesday, the 22nd inst.

—— We are informed that Mr. W. Pratt, Longleat Gardens, has recently been the recipient of a very handsome present from the King of the Belgians, which takes the form of a breastpin set with diamonds and pearls surmounted with a gold crown, given in recognition of the attention tendered to His Majesty during the recent visit to Longleat.

—— From Messrs. Dicksons of Chester come flowers of the hardy border Carnation Mrs. Reynolds Hole, which has been certificated and commended at several exhibitions. The flowers are of moderate size, good shape, and a bright terra cotta red tinged with orange. We recently saw a bed of the variety in which the plants were growing vigorously and flowering freely, proving that it is of good constitution, and the colour is a very popular one.

—— We regret to learn that Mr. Alexander Roger, who has been superintendent of Battersea Park for seventeen years, died on the 7th inst., at the age of sixty-two years, after a long illness. Mr. Roger passed a varied career as gardener in early life, and was appointed to the charge of Battersea Park in 1871, succeeding Mr. Gibson, who had laid out the greater portion of the Park. Several additions have been made and improvements effected since then, notably on the eastern side, which was rendered very picturesque, much taste being displayed in the management of the ground. The Park also was well kept, the carpet and sub-tropical bedding being arranged with especial skill. Mr. Roger leaves a widow and family.

—— Winter Spinach.—"This vegetable," writes "H.," "finds favour in most gardening establishments, and in order to have a good supply when called for, a sowing should be made at once, and again in a week or ten days' time. The ground selected for the crop should be well exposed to the south, be manured, dug, trodden, and made level with a rake. Sow the seeds thinly in shallow drills at from 16 inches to 18 inches apart. The only after attention necessary is to thin the young plants to 6 or 8 inches apart in the rows as soon as they are large enough to handle, to keep them free from weeds, and to stir the soil between the rows with a Dutch hoe as much to keep down weeds as to accelerate growth in the plants. This operation should be attended to frequently from September to May."

—— The chief points to be attended to in Tomato Culture out of doors are to keep the shoots and leaves well thinned and pinched, as any approach to the crowding of these would contribute to failure. By attending to the process of thinning and stopping in due time, and keeping the plants well supplied with water at the roots during ordinary summer weather, no disease will attack the plants, and good crops of wholesome fruit will be secured.—W.

—— Mr. W. H. Divers, Ketton Hall, Stamford, says:—"I have been awarded a certificate by the Liverpool Horticultural Society for the new green fleshed Melon Ketton Gem, raised by myself, and which your reporter spoke so highly of as being awarded the first prize at the Sefton Park Show on the 4th and 6th inst."

—— The Weather.—"B. D.", writing from Scotland, says:—"With occasioual glimpses of sunshine, the weather continues gloomy, cold, and wet. A good deal of hay has been secured in better condition than was expected, but the prospect for harvest is far from bright. Heavy rains have laid the Wheat and Barley very much, and Beans are not filling. There is no appearance of ripening for weeks to come." In the South of England the weather during the past week has been very fine, bright, sunny, and warm—exactly what has been so long desired.

—— The schedule of the Warwickshire Horticultural Show, to be held at Rugby in conjunction with the Agricultural Show on Tuesday and Wednesday, September 4th and 5th, is just to hand. Fifty classes for plants, cut flowers, fruit, and vegetables, open to all exhibitors, are provided, fifty others being devoted to amateurs and cottagers. Substantial prizes are offered for plants, the three principal classes being for ten stove or greenhouse plants in flower, £7, £5, and £3; ten ornamental foliage plants, £5, £3, and £1 10s.; and for the best decoration for a conservatory, to cover a space not exceeding 20 feet by 12 feet, crescent shaped, £7, £4, and £2. The Hon. Sec. is Mr. Arthur Mason, 40, Albert Street, Rugby.

—— "In cold districts," says "H. W.," "the present is a good time to sow seeds of the most approved varieties of Lettuces for Wintering in Cold Pits for transplanting early in spring. Ten days later will be soon enough to sow in warmer districts. These should be sown on a border having a south aspect in beds 4 feet wide, with an alley 1 foot between, covered lightly, and then be protected from the ravages of birds by placing a piece of small-meshed netting over the beds, supported by short forked sticks. As soon as the plants are large enough prick them out in a pit or frame in rows 3 inches asunder, and the same distance between the plants in the rows. The soil should be previously dusted with a mixture of soot and wood ashes to keep slugs away. Plants should be put out in the same manner and at the same distance apart in a dry warm border out of doors, where, during frosty weather, they can be protected with fern or straw in bad weather."

—— The monthly meeting of the Notts Horticultural and Botanical Society was held on the 9th inst. in the Arboretum rooms, when there was a large attendance of members and the general public. There were on view a good display of cut flowers, fruit, and vegetables, in addition to a miscellaneous collection of stove and greenhouse plants. Amongst the most noteworthy exhibitors of plants was Mr. Alfred Page, of Bulwell, who sent three magnificent pots of the beautiful Eucharis amazonica, which were carrying upwards of 300 developed flowers. The same gentleman contributed a choice collection of other plants, amongst which were several good Orchids. Mr. W. H. Farmer of Alexandra Park sent several good exhibits, a pair of baskets containing fine examples of Hoya bella mixed with Maidenhair Fern being very noticeable. Mr. W. F. M. Webb, The Park, had a pretty group of Coleuses, Fuchsias, &c., and Mr. Hallam, Sherwood Rise, some remarkably good Cockscombs. Amongst the other exhibitors was Messrs. J. R. Pearson & Sons, Chilwell, who staged a large and varied collection of herbaceous flowers, which was much admired. Mr. C. T. Cox had a good collection, including many stove flowers. Mr. Lockwood, Clarendon Road, had good Selaginellas, and Mr. J. Booth a fine flowering Orchid. Cut Roses were a leading feature, the principal exhibitors being Mr Fouljambe, St. Ann's Well Road; Mr. T. B. Hallam, and Mr. R. Thurlby of the same place. Amongst the principal exhibitors of hardy fruit which was very fine, were Mr. E. W. Field, Aspley Hall; Mr. Edward Massey, and Mr. R. Halford, Magdala Road. Vegetables were also well shown by Mr. E. W. Field. The Judges were Messrs. Gadd, C. Pearson, Meadows, and Pownall.

—— At the ordinary weekly meeting of the members of the Wakefield Paxton Society, held at Councillor Lupton's, the "Saw Hotel," Councillor W. H. Milnes, the President, was in the chair, and

Mr. H. Oxley occupied the vice chair. Owing probably to the unfavourable weather, and to the fact that it was the Walton Flower Show, there was scarcely an average attendance of the members. Mr. J. Carter, nurseryman, of Cowick, near Snaith, and formerly gardener at Outwood Hall and Portobello House, near Wakefield, read an interesting and thoroughly practical paper on the growth of the Melon. He minutely detailed the mode to be adopted from the sowing of the seed to the fruiting period of the Melon, in order to cultivate it successfully in houses and frames. He also mentioned the best varieties, and gave much valuable advice and many useful hints. As the essayist had to return home by train shortly after nine o'clock there was not time for much discussion, but a few questions were put by Mr. Garnett and Mr. Oxley, and these were answered by the reader of the paper. On the motion of Mr. Garnett, seconded by Mr. Pye, Postmaster, a very hearty vote of thanks was accorded to Mr. Carter, who is one of the oldest members of the Society, for his valuable paper. Several new members were ballotted for, and after they had been duly elected, Mr. G. W. Fallas, one of the Honorary Secretaries, made a report with regard to the annual Window Garden Show promoted by the Society and held on the previous Saturday, from which it seemed that the entries were considerably larger than in any previous year, and, despite the bad weather, the Show attracted a numerous attendance of the public. . Hearty votes of thanks were given to the officers of the Rifle Volunteers for the use of the Drill Shed, to the Mechanics' Institution for the use of their fountain, to the various ladies and gentlemen who exhibited plants and flowers not for competition, to those who had lent tables, stands, flags, and banners, &c., to the decorators, and to Messrs. Fallas and Garnett, the Honorary Secretaries, for their indefatigable efforts.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 14TH.

THE meeting of Fruit and Floral Committees at the Drill Hall, Westminster on Tuesday last was not well attended either by exhibitors or visitors, but the fine weather and the holiday season may account for their absence to some extent.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. W. Warren, R. D. Blackmore, G. W. Cummins, Jos. Cheal, John Lee, W. Marshall, A. H. Pearson, James Smith, and J. Wright. Mr. J. Southam, Orland, Southampton, a few years ago sent specimens of a seedling Apple, of which grafts were requested to be sent to Chiswick; this having been done they were established, and fruits now exhibited from the trees proved to be either identical with or slightly inferior to those of the Red Astrachan, brought for comparison from the Society's gardens. Mr. T. Banyard, Poplar Hill, Cambridge, sent a dish also bearing haulm of a dwarf Pea, with very large pods but too old. It was considered worthy of being grown at Chiswick, to be examined there in due season. Mr. J. Chambers, Westlake Nursery, Chiswick, sent fine and highly coloured Royal George Peaches, for which a cultural commendation was unanimously awarded. Messrs. J. Cheal & Sons sent a dish also bearing branches of Fay's Red Currant, an American variety, but very similar to the Red Cherry. Although the fruits were large, and a dish would show to advantage on the exhibition table, it was deemed inadvisable to grant any award that might induce persons to plant trees extensively for producing fruit for market. Mr. W. Roupell, Harvey Lodge, S.W., sent dessert Apples Mr. Gladstone, Red Juneating and Early Harvest, all ripe and good, the first named especially so, and further, the fruits from trees to which soot and lime had been applied were decidedly the more highly coloured. Messrs. W. Lovel & Son, Driffield, sent a dish of the true Filbert Pine Strawberry, one of the best late varieties, for which a vote of thanks was awarded. Two Melons were sent for examination, but they were not superior to existing varieties.

Messrs. James Veitch & Sons exhibited a remarkable collection of Gooseberries, comprising a hundred dishes of the leading varieties, also cordon and pyramid Gooseberry trees in pots laden with fruit. A silver Banksian medal was recommended. Votes of thanks were accorded to Mr. J. Walker, Thame, for a collection of Gooseberries, Currants, and other fruits; also to Messrs. Paul & Son, Cheshunt, for several good dishes of Gooseberries.

White Transparent and White Astrachan Apples were exhibited from Chiswick, the former having been received from Russia some years ago, and though bearing some resemblance to the White Astrachan is larger and of better quality, the flesh being very juicy, tender, and sweet. Plums, Early Prolific and St. Etienne, also came from the Society's gardens, the former well known and good, the latter a greenish yellow companion, rather larger, and the tree an abundant bearer. Some Figs were also shown, Bourjasotte Grise being the richest in flavour.

Mr. D. Tallerman, of the Leadenham Market Cold Storage Company, attended the meeting, and addressed the Committee on the preservation of fruit. He stated that Strawberries had kept fresh and good in the cold chamber for a month, and Cherries placed in when wet a week ago were now dry and sound. Mr. Barron had inspected them, and was satisfied with the result. Mr. Tallerman thought further action should be taken under the advice and inspection of a committee, which he would be willing to join, and give all facilities he could in conducting further experiments.

A Committee, consisting of Dr. Hogg, Messrs. John Lee, T. Francis Rivers, H. J. Veitch, J. Wright, J. Smith, J. Cheal, D. Tallerman, with Mr. A. Barron as Secretary, was appointed, and a vote of thanks conveyed to Mr. Tallerman for attending the meeting.

FLORAL COMMITTEE.—Present, G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. W. Wilks. J. Fraser, J. Walker, H. Herbst, W. Goldring, W. Holmes, C. Pilcher, H. Ballantine, J. Dominy, J. O'Brien, E. Hill, G. Paul, C. Noble, and Dr. M. T. Masters.

From the Royal Gardens, Kew, came flowers of Pereskia Bleo, large and soft pink, are of the best of the family; Mucuna imbricata, an East Indian climbing plant, with large Pea-shaped, dark, almost black, flowers; the graceful and charming Littonia modesta, bright orange, with narrow cirrhose leaves; and Eucomis bicolor, pale green, edged purple, and purple stamens. G. F. Wilson, Esq., Weybridge, sent a white flowered variety of Maurandya, raised from seed sent from the Sandwich Islands by Mr. Scott B. Wilson. The plant was exactly the same habit as the ordinary M. Barclayana, but the flowers pure white. The pretty little dwarf Stenogaster concinna, Lilium superbum varieties, L. longiflorum, and some pretty Gentians came from the same garden. M. S. Cooke, Esq., Coombe Bury Cottage, Kingston Hill (gardener, Mr. Cullimore), was awarded a vote of thanks for Lælia elegans, with two racemes of four and eight flowers each. G. C. Raphael, Esq., Castle Hill, Englefield Green, Staines (gardener, Mr. W. Swan), was accorded a vote of thanks for Oncidium splendidum, a pale form of the O. tigrinum type, Cypripedium concolor Regnieri, and C. unicolor of a pale yellow tint, and spotless. Mr. Cowley, gardener to F. G. Tautz, Esq., Studley House, Hammersmith, sent a plant of Cypripedium Charles Canham, the flower being large with broad purple tinted petals.

Mr. Gordon, Twickenham, exhibited a collection of Iris Kæmpferi flowers, comprising some beautiful purple, blue, striped, reticulated, and parti-coloured varieties, a pure white one named The Bride being excellent. Flowers of the yellow and maroon dotted Lilium Leichtlini were also sent from the same nursery. Mr. C. Turner, Slough, showed a box of Carnation flowers, very fine examples of Almira, yellow with a few red streaks; Dorothy, salmon and red streaks; Agnes Chambers, yellow edged rose; Coloured Beauty, similar to Dorothy, but with rather more colour; Annie Douglas, sulphur streaked bright rose; and Terra Cotta, salmon buff, with a dull mauve edge, curious (vote of thanks). Mr. J. Charlesworth, Heaton Bradford, sent a plant of Bifrenaria bicornuta, the flowers small, yellow, the sepals and lip barred with brown, the petals dotted with a similar hue. A plant of Odontoglossum Alexandræ heatoniense, a pretty brown blotched variety on a white ground was also shown.

Messrs. H. Cannell & Sons, Swanley, showed some handsome double Tuberous Begonias—Mrs. F. Jenkins, pale yellow; Mrs. Cornwallis West, bronzy yellow; Mrs. Paget, dark yellow; Mrs. Hadden, pale rose, very large, and C. Showell, which was certificated (vote of thanks). Mr. J. Walker, Thame, Oxon, sent a box of cut blooms of Rose La Biche, a strong-growing and free-flowering variety, said to be useful throughout summer and late autumn. The flowers are pretty and neat in the bud stage, white, but when expanded are semi-double. It has been long grown as a pillar Rose.

Messrs. Paul & Son, Cheshunt, contributed a large and handsome group of Roses, hardy flowers, which nearly occupied one whole side of the central table. Phlox decussata La Fille de l'Air (vote of thanks), white with a pink eye, was also very fine. Gaillardias were good, Geum coccineum plenum, Harpalium rigidum, Lilium longiflorum, Poppies, Phloxes, and Carnations added much to the attraction of this important group (silver-gilt Banksian medal). Mr. W. Williams, Walcot Nursery, Ryde, exhibited miniature White Clove, about the size of a white Pink, and a buff yellow seedling Carnation, named Jubilee (vote of thanks). Mr. G. Davidson, Ammanford, Carmarthenshire, sent the large white Lobelia Miss Hope, and Mr. T. Williams, Devizes, had a plant of a blue and white Lobelia, said to be a sport from Blue Beard.

Mr. T. S. Ware, Tottenham, was adjudged a bronze Banksian medal for a beautiful group of hardy flowers, comprising a collection of early-flowering Chrysanthemums, the bright yellow Precocité being one of the best. Gaillardias were very handsome, Phloxes, Iceland Poppies, the blue Pentstemon heterophylla and Cannas were also notable. Mr. R. Dean, Ealing, exhibited a collection of Phloxes, White Intermediate and Mauve Beauty Pyramidal Stocks, with several pretty border Carnations, Fair Maid being a soft pink variety, and White Lady, pure white. (Vote of thanks.) Messrs. Cheal & Sons, Crawley, showed their patent wire flower support, recently noted in these pages, which was commended.

CERTIFICATED PLANTS.

Croton Aigburth Gem (R. P. Ker & Son, Liverpool).—A graceful narrow leaved variety of the interruptus type, the leaves drooping, bright red green and yellow, very handsome.

Begonia C. Showell (Cannell & Sons).—A grand double Tuberous Begonia, the flowers of excellent shape, symmetrical, the petals slightly undulated, full, and of a bright rose colour.

Carnation R. H. Elliott (Laing & Mather, Kelso).—A pleasing variety, the flower of moderate size, yellowish streaked rosy scarlet.

Papaver orientale Blush Queen (T. S. Ware).—Flowers large as the ordinary P. orientale, pale blush, with purplish black blotches at the base of the petals. It lasts well in flower.

ORCHIDS

ODONTOGLOSSUM MACULATUM.

This must be placed amongst the most useful of easily grown Orchids, and the woodcut (fig. 17) represents a specimen that well shows what can be done with the plant when it is properly treated. Varieties are numerous, and they differ greatly in merit, the one here depicted being in the style of the interesting O. Humeanum, which has been supposed to be a natural hybrid between O. cordatum and O. Rossi. The greenish brown sepals, the yellow brown dotted petals, and lip afford a peculiar combination of tints, wanting perhaps in the brightness some appreciate, but carefully arranged with other flowers they have a good appearance. One valuable character is the length of time the flowers last either cut or on the plant, and as growth is made at different seasons of the year a succession of flowers is obtained over a long period.

Odontoglossum maculatum will stand much rough treatment, but its demands are so small upon the attention of a cultivator that there is no excuse for neglect. A little good fibrous peat, plenty of sphagnum, a cool well ventilated position, and plenty of water from spring to autumn are the chief points to be noted. Any ordinary cool Orchid house will suit the plant, and during the summer a frame not much exposed to the sun and a moist base of ashes will afford suitable quarters. The admission of dry hot air directly on to the leaves is injurious, but in the summer months it is well to afford all the ventilation that can safely be provided, and a moderate exposure to sun to mature the growths will assist the plants.—Orchidist.



Fig. 17.—Odontoglossum maculatum.

THE WEATHER AND GARDEN CROPS.

In response to our invitation last week numerous correspondents have obliged us with notes on the weather of June and July, with its effects on garden crops. A portion of these communications appear in the present issue, and we are reluctantly compelled to withhold many of equal interest until next week.

CHESHIRE.

The months of June and July were unusually wet and cold for the time of the year, though the actual rainfall here we have not measured. The effects of the want of sunshine and cold are that the season is unusually late, and as a proof of this we have not yet cut a Vegetable Marrow nor gathered a dish of Runner or French Beans, when last year we were using them long ere this date. Potato crops are pretty good both in bulk and quality, though amongst the haulms there are indications of disease. The Pea crops have been good too, excepting the dwarf varieties, which have not done nearly so well as the taller ones. Ne Plus Ultra has grown to about 9 feet high, and a fine crop, giving complete satisfaction at the table. If we have fine weather throughout this month the season may be classed as fair, as the bulk of crops are good.

Amongst annuals Stocks and Asters are good; the former are better than last year, though the latter are scarcely so far advanced as to write with certainty on the comparison. I have grown the East Lothian Stocks for many years, and this season I may say they have been very

fine. Roses in the early part of the season were poor, with many of the petals damaged by insects, but now (August) the blooms are very good, Général Jacqueminot being conspicuous in its abundance of bloom. Bedding plants are unusually poor at this time, and if we have not a good autumn it will be one of the most unsuccessful of recent years.—ROBT. MACKELLAR, *The Gardens, Abney Hall, Wheadle.*

HAMPSHIRE.

THE rainfall here at an altitude of 395 feet during the month of June was 3·31, as against 1·41 in June of last year. July produced 5·48 as against 0·26 of last year. Rain fell on fourteen days in June this year as against eight days last year in the same month. The largest quantity was 0·62 on the 27th June this year. In July there were nineteen wet days; the largest quantity collected was 1 inch on the 2nd of the present year. In July of last year the largest quantity was 0·11 on the 5th. The temperature reached 80° in the shade on six occasions only in June, the highest being 83° on the 24th. The lowest temperature registered was 42° during the night of the 17th. On ten nights only was the temperature above 50° during the month. July did not produce a single instance of the temperature going above 76°; this the highest on the 14th, while on fourteen occasions only did the heat reach over 70°, as against thirty-one times in 1887. The lowest temperature this year was 39° on the 9th, while on nine occasions the temperature was below 45°. During nineteen days the wind in a southward direction. It is known that in July we should have 497 hours of sunshine, but this year we had only 94¼ hours. On sixteen occasions during June last year the temperature was 80° in the shade, while on three days it went over 90°. During July last year the temperature reached 80° twenty-six times. Nine nights only registered a heat below 52° during the month.

The heavy rainfall of the past month and low temperature with absence of sun have been much against the growth of outdoor crops, particularly vegetables, here on our heavy retentive soil. Broad Beans have scarcely podded at all, while Peas sown on the 9th of February were not ready to be gathered until the end of July, the variety being Fortyfold, generally such a good cropping sort. We shall not be able to pick French Beans outside yet for a fortnight. Tomatoes which were such a heavy crop in 1887 have not yet set a single fruit out of doors. Autumn Onions are badly diseased, they usually do well here. Spring-sown Onions look remarkably gross, and if dry sunny weather prevails the crops will be good yet. Early Cauliflowers have done very well indeed, while Veitch's Autumn Giant have not yet turned in, although sown in the autumn and wintered in frames. Potatoes are medium, and late sorts are a large crop, but except Sutton's Seedling are of bad quality, and are now much diseased. Early Peas sown in pots, planted out carefully, succeeded admirably; in fact without these we should have been without supplies for a long time. Broccoli and Winter Greens do not grow freely in this neighbourhood, there is much complaint of the plants being blind. Turnips have been unusually good this year, Snowball is the best variety.

Small fruits have done capitally, so have Cherries, both on the walls and in the orchards. Apples are only a fair crop, and very small as yet. Pears poor; Strawberries much below the usual standard, as many as 20 tons less being sent away from one station in a day, as a large quantity is grown in the neighbourhood to supply the London and other markets. Fruit decayed on the ground in quantities owing to the wet sunless weather.

Among bedding plants Tuberous Begonias are far the best plants. In spite of the adverse weather they make a splendid show, while Pelargoniums have scarcely a single perfect truss to show. Blue Lobelias appear to stand the weather fairly well. Some carpet-bedding plants, such as Mesembryanthemum cordifolium variegatum, make the best show this year. Alternantheras have made but little progress, the space not being yet filled. Perennials are best represented by Lobelia cardinalis, used as a bedding plant. This looks remarkably well. So do Stenactis speciosa, Bocconia cordata, Mule Pinks, Carnations, Erigerons, Phloxes, double and single Delphiniums, Canterbury Bells, Centranthus ruber, Achilleas of sorts, Lychnis viscaria fl.-pl., Aconitum Napellus, Chelone barbata, while Lilium candidum has failed to develope a single presentable bloom, the foliage died first followed by the flowers. Single Dahlias have grown and flowered freely for some time now, and so have the Cactus varieties Juarezi and Mrs. Hawkins. Many of the perennials have grown out of character entirely—for instance, Echinops Ritro has grown 6 feet high, whereas it generally only grows 4 feet high. Amongst annuals Zinnias are a total failure, so are African Marigolds, Dianthus, annual Chrysanthemums, Corcopsis, and Salpiglossis, while Asters promise well. Petunias are fairly good, the same may be said of Iceland Poppies sown this year.

Hardy deciduous and evergreen flowering shrubs and trees bloomed remarkably well and have made much satisfactory growth. Particularly this applies to Rhododendrons, which are already forming plump flower buds. Conifers have grown well. The foliage of Beeches, Limes, Elms, &c., I have never seen looking better.—E. MOLYNEUX, *Swanmore Park Gardens, B. Waltham.*

THE rainfall for June and July at this place I append; 300 feet above sea, distance about six miles. June 4·23 inches, on the 26th 1 inch fell in an hour, from 9.45 A.M. to 10.45 A.M. Rain fell on fourteen days. In July 6·29 inches. The most registered for the preceding twenty-four hours was on the 8th, 1·45 inch; on the 3rd, 1·22 inch. Rain fell on seventeen days. Total rainfall for the two months 10·52 inches.

I append for comparison the monthly rainfall to date for this year. January, 1·63 inch; February, 1·00; March, 4·32; April, 1·73; May, 2·18; June, 4·23; July, 6·29; August to 11th, 1·03. Total, 22·41.—N. FULLER, *Gardener, Idsworth, Horndean.*

LANCASHIRE.

THE weather during the months of June and July has been extraordinary. Rain has been frequent, and sunshine rare, we had but a few hours during some weeks. This has been most trying to late Grapes, and there has been a great difficulty in preventing "scalding;" in fact, with every care, we have lost more berries by this cause than altogether during the past ten years. With the exception of one or two bunches serious injury has not been done. The kind of weather we have had has been most trying to Cucumbers under glass. They have suffered severely when the sun has come out strongly; in fact, their foliage has been so void of substance, that they have quickly displayed signs of distress. To keep them going it has been necessary to take light instead of heavy crops from them. Large quantities of the young fruits have turned yellow when they should have swelled. Red spider and aphides have troubled us more on these plants than we before remember, while Broad Beans and Lettuces outside have been smothered with the latter.

Small fruits have done fairly well, but have been sadly deficient in flavour. The fruit of Vicomtesse Hericart de Thury Strawberry has stood the wet weather much better than we expected, for very few fruits decayed, while those of larger fruiting varieties decayed before they were ripe. Cherries have all cracked, but Morellos look well, and up to now we have not observed a cracked Gooseberry.

The wonder is that crops outside have done as well as they have. During the night of July 31st the thermometer fell to 34°, on a former occasion to 36°, several nights it was only 40°, while the highest day temperature of the 30th was only 55°. French Beans on early borders are practically a failure, for they are only just tuning in, and the plants have a stunted appearance. Those in the open quarters were nearly blown out of the ground in June, the foliage being broken and battered to such an extent that they looked wretched a few days afterwards. They have recovered and look promising now, but one named Emerald Gem has stood the trying season and looks healthier and more promising than either Osborn's or Canadian Wonder sown at the same time. Peas were blown out of the stakes, and so damaged that they have not filled well. Potatoes are a light crop, and the haulms of nearly all the second earlies are fast dying; they have the appearance of being badly diseased, but no trace has yet been found amongst the tubers.

Amongst out door flowering plants Pansies and Violas, Musk (both the common and Harrison's) have continued to flower well. Calceolarias that were not in flower when they were planted are now in excellent condition. Pentstemons have shown a tendency to grow, and have flowered only fairly well. Antirrhinums seemed to have defied the elements, while Candytuft, Mignonette, and annual Chrysanthemums have never been better. Bedding Pelargoniums have surprised us by the way in which they have flowered, that is autumn-rooted plants. It was hot and dry when they were first put out, which ripened and hardened them well. Spring-struck plants have done nothing but grow. Bicolors during wet seasons have generally a weedy appearance, but Crystal Palace Gem is an exception, it has grown freely and coloured well. Roses have had a starved appearance, and the blooms have generally been deficient in size and colour, while hundreds decayed before they opened. They have grown well however, and now look promising to continue a supply of blooms over a much longer period than has been the case for years.—WM. BARDNEY, *Norris Green Gardens, West Derby, Liverpool.*

LEICESTERSHIRE.

THE weather during May was cold and dry, and June came in with rain which was much needed, as from March till June many of the farmers had to carry all the water to their cattle. The wind, which had been N.E. nearly all the spring, was southerly for two days; but the temperature was only a few degrees higher, and it returned to the N.E. again. From that quarter we have nearly all the rain. The thermometer registered as low as 40° on thirteen nights during June, twice 38°, once 36°, and once (June 30th) it was 34°. In some places it was quite a white frost. On eight different days the maximum temperature did not exceed 55°. On the 24th the thermometer rose to 76°, while on the 25th, 26th, and 27th, 79°, 82°, and 88°, when another change came, and on the morning of the 30th the thermometer registered 34°. The first week in July we had a little rain nearly every day, but the second week we had heavy rains every day, which continued, though not quite as heavy, during the following week, since which time the weather has been more favourable, and we have now (August 10th) beautiful summer weather. The last four days the thermometer has been above 80°. The spring and summer so far have not been very changeable. With a few exceptions it has been cold throughout, and vegetation has advanced steadily. Up to this time I think this summer is quite equal to the last, though widely different.

Potatoes were late coming in, but we have good crops of the earlies and free from disease. Peas have been and are still very good; our soil being rather light, the wet weather has suited them, and we have promise of good crops for at least another month. The wet has just suited the Celery, and at present we are quite free from the fly. Parsnips, Carrots, and all the Brassica tribe are now doing well. Onions have made an abundance of top, but no signs of bulbing at present. Broad Beans are good. Dwarf Beans have not done well, and are very late.

Scarlet Runners are late, but promising: we are just gathering our first dish.

Roses were very promising in bud, but the wet prevented quite half of them from expanding, more especially such light sorts as Miss Hassard. Phloxes and Madame Desgrange Chrysanthemum are unusually early this year: some of the latter are quite expanded. Dahlias are late, the cold prevented them from starting into growth. Delphiniums, Aquilegias, Sweet Williams, Sweet Peas, Pansies, and Violas have all done well. Calceolarias usually do well here, but have gone off badly this summer. Pelargoniums, Petunias, and Coleuses, have not succeeded so far, but are looking better now. Apples (except Keswicks) are very light this year, as also are Apricots, Plums, and Pears. There were many blooms, which set well but dropped soon afterwards, owing, I believe, to last summer's drought. Strawberries were quite a failure, another cause of the dry summer last year. Gooseberries and Currants, Raspberries, and Cherries are heavy crops.—J. L., *Leicester.*

NORFOLK.

The rainfall here for July was 4·80 inches. Bylaugh Gardens are elevated, standing much above the surrounding country, 130 feet above sea level. On a sandy gravel the rains have been more of a benefit than otherwise. The Park and surroundings, usually scorched at this season, look lovely, the trees especially a mass of heavy green foliage. The flower beds have been poor, but the plants grew and are looking well now. I was not able to get many Strawberries for preserving, though we had a heavy crop. With the exception of a little hay spoilt on the home farm, I know of nothing injured. It has been, on the whole, a fine time for this light sandy soil. My vegetable crops are enormous. No mildew. Early Potatoes all up with no disease. Late ones I grow on the farm, putting them with the root crop. The land is farmed on the four-course system, so they never occupy the same land, and no disease is heard of. Onions are fine, autumn ones now ripening, spring-sown about half grown. Other vegetables, Peas and Beans, look equally well. Bylaugh is about the centre of Norfolk, six miles from East Dereham.

As to temperature, our maximum was 73° on the 20th. On three nights, July 1st, 7th, and 31st, the minimum was 32°, quite a white frost on the low lying meadows; it did no harm, slight early and late frosts seldom do here, though French Beans and some few other things hung their leaves a little.—A. Fenn, *Bylaugh Gardens, East Dereham.*

NOTTINGHAMSHIRE.

The wet, cold, and sunless weather which characterised June and July, and at which I have, with the rest of Britons, growled—ungrateful sinners!—has come to me, I am constrained to confess, full of benedictions. I have forgotten the frowns of June and July in the smiles of August. My water cisterns were empty, they are now full. My garden was gasping for rain, and almost refusing to move on; it is now full and plenteous with all manner of good things. The ladies get baskets and baskets of flowers daily, and plenty of fruit, and the cook is smiling and satisfied; what more can a gardener want? I am not a scientific measurer of the rainfall, nor a precise note-keeper of the weather. I go by my feelings, and as my feelings are only feelings, general in their tendencies, and perhaps slightly sentimental—an odd confession that for a man of fifty-six to make—they are not worthy of being recorded in a professional and scientific chronicle of garden events and meteorological influences. Amongst flowers herbaceous borders are wild with luxuriant growth, many of the plants have done excellently, nearly all well. Delphiniums surely never was so grand, and Phloxes promise great things. Roses have given occasional blooms of great glory and beauty, though many have died prematurely. The bedding out is late, and now there is a disposition to excess of leaf growth rather than flowers on flowering plants, but the carpet bedders have been improved by the past wet and present sun. Zinnias, Phlox Drummondi, and such like, are very backward, but picking up now. Beds of Petunias are going on finely; they had a struggle for it through June and July.

In the fruit garden Strawberries have been a failure, a paucity of flower stems, the result of the drought last year, and the wet spoiling those that did flower. If it had not been for Black Prince and Vicomtesse Hericart de Thury we should have been in a very poor way indeed. These kept us going for table consumption and garden picking and eating, and that only. Bush fruit are grand, Currants never finer, Blacks especially so. Pears will be a fair crop and general. Apples are only middling, rather below the average, and the winter sorts lowest of all. It is not a Caldwell year with us at any rate, and we rely on this variety for chief winter supply. Plums are scarce; Rivers' Early Prolific and Victoria are the two that are distinguishing themselves. I believe I am satisfied with everything in the kitchen garden. The assessment of the garden crops, when we come to sum up, is largely on the side of blessings however, and in the present sunshine of August who shall, who can, ungratefully murmur?—N. H. Pownall, *Lenton Hall Gardens, Nottingham.*

The total rainfall for June and July was 6·28 inches, sunshine 204 hours. We had nine sunless days in June and six in July. Rain fell on seventeen days in June and twenty-one in July. Vegetation quite fourteen days late; the first June in twenty years we have not gathered Strawberries. Some quarters have not fruited at all, others a fair average crop. Currants, Raspberries, Apples, Peaches (outside) very abundant. Cherries fair, Plums, Apricots, and Pears poor crops. Peas and Beans late and not good, Potatoes heavy crops, but wanting sunshine and dry weather. Of Roses we shall have a late long season, the dark sorts open better than paler colours. Most herbaceous flowers have done well, and the flowers lasted longer than in finer seasons. In bedding plants Pelargoniums have all their flowers washed off or decayed, whilst Tuberous Begonias are rather late, but good, and do not appear to have suffered from the damp cold weather. Stocks, Asters, and Zinnias are doing fairly well.—Joseph Mallender, *Hodsock Priory Gardens, Worksop.*

RUTLANDSHIRE.

June was very changeable, but mostly dull and showery. We had only four bright sunny days during the month. We had thunderstorms five times, but not very heavy. The following observations are taken according to Symons' rules with instruments registered and certificated at Kew. We are 130 feet above sea level. June, barometer (not corrected to sea level): highest, 30·30° on 19th and 23rd; lowest, 29·55° on 20th. Average height of readings (9 A.M.), 29·99°. Thermometer highest in shade, 84° on 26th; lowest, 38° on 14th. Mean temperature of the whole month, 58·30°; lowest on grass, 35° on 14th. Total rainfall, 1·55 inch; greatest amount in twenty-four hours, 0·51 inch on 20th. Rain was recorded on eighteen days.

July was very wet and dull, not one bright day during the month. Temperature generally low, very little sunshine, and frequent showers. Barometer: highest, 30·15° on the 13th; lowest, 29·48° on 3rd. Average height of readings at 9 A.M., 29.69°. Thermometer: highest in shade, 73° on 19th; lowest, 40° on the 1st. Mean temperature of the whole month, 57·39°; lowest on grass, 34° on the 1st. Total rainfall, 4·14 inches; greatest amount in twenty-four hours, 0·71 inch on the 2nd. Rain was recorded on twenty-three days. We had a very heavy thunderstorm with hail on 4th, when 0·21 inch of rain was recorded in about twenty minutes.

Taking all things into consideration this has been a good season for these gardens, which are naturally dry and well drained, and the soil is full of small limestone, which have a very bad effect in a dry season. Roses flowered freely, but so much wet caused many of the flowers to decay almost as soon as they opened. Bedding plants have not made much progress since planting out, and Pelargoniums have very little flower on them, dwarf Tropæolums and Lobelia making the most show at present. Tender bedding plants are smaller than when first planted out. Our mixed borders have succeeded much better, and are much preferred to ordinary flower beds. Annuals.—The following have flowered well:—Bartonia, Nemophila, Leptosiphon, Clarkia, Erysimum, Godetia, Delphiniums, Sweet Peas, Centaurea cyanus, Linum grandiflorum, Schizanthus, Malope grandiflora, Eutoca viscida, Collinsia, Convolvulus minor, Chrysanthemum segetum, Phacelia campanularia, Xeranthemum, &c. Perennials also have been very gay, especially Papaver bracteosum, early Phloxes, Delphiniums, Iris germanica, Spanish Iris, Veronica rupestris, Pyrethrums, Monardas, Campanulas turbinata and persicifolia alba.

Among other plants Dahlias and Sunflowers are very late this season. Liliums, especially L. candidum, have not flowered so well as usual, owing I presume to the dry weather last season. Vegetables have grown freely, and are mostly good crops. Peas have been a long time filling, and are not so well flavoured as usual; they are also nearly twice their average height. French Beans and Scarlet Runners are very late; we have not yet (August 10th) gathered any outside. Tomatoes outdoors are a poor crop; by sowing early and getting large plants we have been able to gather a few fruits.

Early Potatoes are a heavy crop, but disease showed itself in the tops August 8th; we have none in the tubers at present, and they will be dug up as soon as possible, well dried, and stored in a cool place. Late Potatoes look well and have no disease at present. Snowdrop and Magnum Bonum are our favourites for autumn and winter use. Strawberries have been very scarce; owing to the dry season last year they did not make their growth soon enough. Currants, Gooseberries, and Raspberries, heavy crops and good here, but some growers complain of their lacking flavour. Apples are a medium crop, Pears thin crop, Plums very few, Cherries abundant, Peaches and Apricots very few. Many of the fruit trees were badly eaten by caterpillars early in the season, but aphides have not been troublesome.—W. H. Divers, *Ketton Hall Gardens, Stamford.*

SUSSEX.

I have no means of ascertaining the exact amount of rainfall, but from the first week in June to the first week in August it rained more or less every day or night, with much thunder and no sun for days, together with more wind that usual at this time of the year, and very cold nights. Everything is fully three weeks later than usual.

Among kitchen garden crops, early Turnips have been good, Cabbages and Cauliflowers are abundant. Peas have all grown strong and taller than usual, but have cropped well, though some sorts have not filled well, owing, I presume, to so much wet at flowering time. Onions are first rate though very late. Amongst Potatoes Early Rose, Ashleaf, and other early kinds yielded abundantly of large sound tubers, but too much wet spoiled their flavour; they were free from disease. Not so with midseason and late sorts, for they are badly affected. The disease was first noticed the last week in July upon a batch of Schoolmaster, in a few days it spread to all other sorts grown, and the haulm is nearly all dead. Carrots and Parsnips good; Vegetable Marrows good but late. Ridge Cucumbers later still, too cold for them. Kidney Beans and Scarlet Runners late but good crops. Tomatoes outdoors growing strong, but no fruit set, want sun and warm nights.

Fruits—Strawberries a fair crop, ripened slowly and much fruit

decayed through wet. Gooseberries, Currants, and Raspberries an abundant crop. Peaches and Apricots none. Pears on standard trees are a failure, but on walls a good crop. Apples on large old trees not a third of a crop; young pyramid trees have the advantage and have a fair crop. We had some severe frosts throughout May and these escaped. Cherries a good crop but spoiled by the wet. Plums on standards no crop, and the trees on walls have very few. Medlars and Walnuts a good crop. Fig trees not much affected by the drought last summer, and this year carry no fruit, with the exception of two large trees in a sheltered and shady position; these have a good crop.

Coming now to flowers, I am sorry to say that those we have taken most pains with, I mean the ordinary bedding Pelargoniums and other bedding plants, are most unsatisfactory; they grow but do not flower, and are not healthy looking. Clearly the excessive wet and cold nights have been against them, and had I not planted out a lot of annuals my cut flower supply would have been short. Stocks, Mignonette, Nemophilas, Diantbuses, Candytuft, Convolvulus, Sweet Peas, and several others have kept me going and made the garden gay, and so far have put the bedding Pelargoniums in a third-rate place. Among perennials Campanulas, Delphiniums, Antirrhinums, Sweet Williams, and many other similar things have been a great help. Roses have grown strong, but through wind and wet half the flowers did not open.—T. RECORD.

THE rainfall here in mid-Sussex during the past two months was—June 3·91 inches in sixteen days, July 5·03 inches in twenty-two days—total 8·94 inches. The average of fourteen stations in various parts of the county was 5·23 inches. The heaviest fall in twenty-four hours occurred at Hastings on the 19th July, when 2·31 inches was registered. The heaviest fall for July at any station was 7·30 inches at Singleton. The season all through has been quite as remarkable for the want of sun as for the quantity of rain. Crops are very late. Strawberries swelled and yielded well, but were soft and flavourless, and much of the crop rotted on the plants. The same may be said of other soft fruits. There are a few Pears, but Apples are extremely scarce in this part of the county. Onions and Runner Beans have suffered most—the former only beginning to swell out, the latter falling off. We have lifted our early kidney Potatoes, having pulled the top out as soon as the blight made its appearance, and have them sound and dry; but we were not so fortunate with Snowflakes, they having been a few days longer in the ground. Since the 5th inst. we have had fine clear hot days, the thermometer above 80° every day.—R. INGLIS, *Cuckfield*.

WESTMORELAND.

THE rainfall for June here was 1·29 inches, rain falling on nine days. The highest and lowest temperatures were 80° and 31°, the former on the 26th, the latter on the 24th. The thermometer of a night registered very low for the greater part of the month, quite retarding growth. In fruit and vegetables, and tender bedding plants also, suffered very much during the month, especially Iresine and Alternanthera, from the low temperature and cold east winds. Our rainfall for July was 6·04 inches, rain falling on nineteen days. The highest and lowest temperatures were 62° and 32°, the former on the 4th, the latter on the 1st. The month throughout, with the exception of a few days at the early part, was very wet and showery, with thunder at times.

Our early Potatoes are lifting well, with no trace of disease at present. Later sorts are also looking well; the haulm, owing to so much rain, has made an extraordinary growth, but is very healthy. All fruit crops are very late, and some kinds quite a failure. Peas are filling very slowly, and French Beans, I am afraid, will be no good, the weather quite retarding their growth. All flowering shrubs here have done well this season, no doubt owing to the hot dry summer of last year, which was the means of ripening the wood thoroughly. I find the Begonias most satisfactory as bedding plants in wet weather here.—F. CLARKE, *Lowther Castle Gardens, Penrith*.

WILTSHIRE.

JUNE and July of the present year will rank among the wettest and coldest summer months we have had during the last forty years. The only way in which these unfavourable conditions affected the kitchen garden crops is in lateness of turning in, the quantity and quality of the produce having been everything that could be desired. We have had, and still have, an abundance of Peas and Cauliflowers of the best description, the former having been sown and planted (out of pots) in rows running north and south at from 6 to 8 feet apart, with a good mulching of decayed manure on each side, and from two to three rows of Cauliflowers between. One good effect of the rainy and sunless weather throughout the month of July is that Peas have kept much longer in bearing than is the case during an ordinary summer. Sutton's Royal Jubilee is a grand Pea, being a prodigious cropper, the pods containing from nine to twelve large and well-flavoured peas, each being large and handsome. As an exhibition and all-round good Pea it has no rival here. The effect of the cold and rain on outdoor flowering and foliage plants in the flower garden is very marked. The only plant which is really flourishing is the Viola. Beds of silver and golden-leaved Pelargoniums, intermixed with Blue Perfection and Golden Queen Viola, are everything that could be desired. It is truly a wet summer plant. Lobelia pumila magnifica, and Ageratum Tom Thumb, a very dwarf growing compact variety, are, since a favourable change in the weather has taken place, now masses of deep blue and mauve. Beds of Verbenas, Calceolaria amplexicaulis, and tuberous-rooted Begonias are also very effective. Roses, both on standards and on their own roots pegged down in beds, have suffered considerably in consequence of so much cold and rain, but the present condition of the trees augurs well for a good autumn display.—H. W. WARD, *Longford Castle Gardens, Salisbury*.

WORCESTERSHIRE.

JUNE and July of the present year will be long remembered, not only for the heavy rainfall, but also for many days in succession without the least sunshine, and the extremely cold nights, forming a striking contrast to the same months last year. The rainfall for June as registered in these gardens was 1·84, rain falling on thirteen days; wettest day, 27th, 0·50. For July it was much heavier, rain fell on no less than twenty-two days; wettest day 23rd, when 0·76 fell. Total for the month, 5·22.

The heavy rainfall, together with dull cold weather, has caused many disappointments, especially so with the Strawberry crops, which suffered greatly from damp and the attacks of slugs. On some lands Broccoli and Brussels Sprouts have grown to an enormous size, and should a severe winter follow, I am afraid we shall bear many accounts of these winter vegetables being cut down. The losses will be greatest where planting has been done on rich and newly dug ground, showing once more the great evil of this. Where the iron bar had to be used the growth made was slower and naturally more consolidated, and will be much better able to stand severe weather later on.

In general the weather has been greatly against most outdoor flowering plants, but it sometimes happens that a wet season up to a certain point suits some flower gardens better than a dry one. Such I find the case here, and though many of the Pelargoniums are dashed with the rains, a few bright warm days would dispel this appearance, and the garden would look much better than last season. The following have grown and stood proof against the rain: Ageratums, Pansies, Lobelia, R. Fish Pelargoniums, Iresine, &c. Of annuals, perhaps the best are: Mignonette, Zinnias, Candytuft, Helichrysums, &c. Petunias and Nasturtiums, though planted extensively, have failed, producing nothing but growth, especially the former.

The herbaceous borders have been remarkably gay, Phloxes producing an abundance of bloom ever since June, and will continue for some time. The Lychnis have proved valuable and very showy, especially L. Viscaria and L. chalcedonica; the latter at the present time is quite conspicuous with its scarlet flowers. Helenium pumilum is one mass of rich yellow flowers, growing beside the above Lychnis. All the Spiræas have done well, this season just suiting them, while such graceful plants as Montbretia Pottsi and Sparaxis pulcherrima are producing finer spikes than I ever remember seeing before. Campanula Hosti has been very good indeed this season. In fact, in seasons like the present, or at any time, I consider more pleasure can be derived from a good collection of herbaceous plants than can be found in any ordinary terrace gardens.—R. PARKER, *Impney Gardens, Droitwich*.

YORKSHIRE.

IN Sheffield the weather throughout June and July has been almost uninterruptedly dull, cold, and wet, wind continuously in the north-west. Very few days occurred on which rain did not fall, and very few upon which we had sunshine.

All garden crops are exceedingly late, more so than in any previous season within my memory. We are only now (August 11th) commencing to gather midseason Peas sown in March. None, excepting the earliest varieties of Potatoes in warm positions, are yet ready for digging. Strawberries just in, midseason, differing much as to sorts. James Veitch, a heavy crop of large fruit, but more than half decayed; Black Prince, good crop, fairly sound; Vicomtesse, President, and Sir Joseph Paxton mostly barren. Gooseberries, Currants, and Raspberries, heavy crops, now ripening. Jargonelle Pears, very heavy crops; other varieties a fair average. Apples a small crop; Plums likewise. Kitchen garden crops promising to be fairly good, but extremely late. No Potato disease yet apparent.

Bedding plants have made little growth and less flowers. Hardy and half-hardy annuals have grown fairly well, but are only just now opening their first flowers. Perennials have grown strongly, but have only made a poor display, their flowers being spoilt by continued rains. Carnations are not yet in flower, will not be so before the end of this month. Chrysanthemums generally look well and very promising. The season on the whole has been the most difficult and unproductive one to gardeners.—W. K. WOODCOCK, *Oakbrook Gardens, Sheffield*.

THE contrast between the two months of June and July of last year and the same months of the present year are strikingly brought out by a few figures, furnished by a correspondent in a daily contemporary.

In the two months of June and July of last year there were recorded at the Royal Observatory, Greenwich, 507 hours of bright sunshine; in the same months of this year only 227 hours, the average being 346 hours. Last year out of 61 days there were 43 on which more than six hours of sunshine were registered; this year there were only 15 such days. The days without sunshine were correspondingly 3 and 12. Last year only 48 per cent. of the sky was on the average covered by cloud, this year the average was 82 per cent. We have to go back to 1879 and 1860 to find years correspondingly cloudy, the percentage of cloud being in both years 81, and both being years remembered by agriculturists. Then as regards rain. In the months of June and July of last year the rainfall in all amounted only to 2·52 inches; in the present year this was 10·10 inches, the average being 4·37 inches. In no year since the establish-

ment of official record (1841) has the latter amount been at all equalled. The greatest falls occurred in 1853, 1860, and 1879, when the amounts registered were respectively 8·23 inches, 8·60 inches, and 8·01 inches. The amount for the present year is of course increased by the unusual and excessive rain of July 30th, when 2 inches of rain fell within the short space of four hours, causing the floods and consequent damage of which we have heard so much. In June and July last year rain fell only on three days and ten days respectively; there being 26 days (June 6th to July 4th) absolutely without rain. In the same months of this year rain fell respectively on 15 days and 26 days. That is to say, out of 61 days rain fell last year on 13 days, and this year on 41 days.

A few words now on temperature. The mean temperature of the month of June last year was 60·9°, or 1·1° above the average. This year it was 58·3°, or 1·5° below the average. That of July last year was 66·5°, or 3·9° above the average. This year it was 57·9°, or 4·7° below the average, and no less than 8·6° below the value for last year. In June and July of last year the temperature rose above 80° on twenty-one days; in the same months of this year only on three days—never, indeed, reaching 80° on any one day in July, the highest record for this month being 74°. July 11th and 12th of this year will be long remembered, the highest temperature reached on these days being 55° and 54° respectively: the mean temperature of the same days being respectively 15° and 13½° below the average.

These remarks apply, of course, primarily to the London district, although in general applicable to a larger extent of country. The figures given will show how extreme, so far, have been the meteorological conditions of the present summer, and how completely in contrast with the fine weather of the corresponding portion of last year.

THE ROMANCE OF SEED-SOWING.

(*Continued from page 126.*)

II.—Winds.—In many ways we see the action of this second agent The simplest cases are those where the seeds (or their equivalents) are infinitesimally small, and of exceeding lightness. Thus, the spores of Fungi, Lichens, Mosses, and Ferns are easily carried by the wind to distant places; and so the members of some of the above named orders have an almost world-wide range. Some seeds of flowering plants are also light enough to be thus transported, or else they have some mechanical contrivance to render them so. One of our little Corn Salads (Valerianella auricula), whose fruit contains three cells, develops only one seed, the remaining two empty cells acting as a kind of balloon to the fruit, and most likely facilitating their movement by the wind. Then, again, there are seeds which are flat and very thin. Those of Yellow Rattle, a parasite on Meadow Grasses, afford an example. The wind shakes them out of their bladder-like capsule at ripening time, and carries them to a distance, where they find a congenial resting-place.

Coming to more familiar and more easily seen contrivances we find the winged fruits and seeds known to most of us. Among winged fruits we have the keys or doubly winged fruits of Sycamore and Maple, the single one of Ash, and the well-known winged nuts (so called) of Birch and Elm, those of the latter covering the roads in April and early May. When the winged fruit is detached from the tree it falls slowly with a rotatory motion, and the wind, if enough be present, is sure to catch it and bear it away. Lime has no winged fruit, but the long, narrow bract at the base of the bunch of fruits serves the purpose. Watch a bunch of Lime fruit falling, and note that the fruits hang lowermost, the bract catching the wind and carrying the whole mass away—very often to some distance. Among plants also we find instances of winged fruits, as in Dock, Parsnip, and Penny Cress, the latter being, like others of its order, a winged pod or pouch containing the seeds. In the case of Pines it is the seed which is winged—*i.e.*, it carries with it a portion of the scale to which it was formerly attached. So the tiny seeds of Arbor Vitæ and Cypress in our gardens are surrounded by a thin membranous wing; equally provided are those of the beautiful Trumpet Creeper, while the seeds of some Begonias are so delicately winged that they describe a series of circles in the air, hovering, so to speak, before they finally settle. There is one instance of a wind-wafted fruit which, although not winged, I may name here. I refer to the "Rose of Jericho," a pod-bearing annual found in Syria and Egypt. Its pods, when dry, curl themselves up into a ball, and are driven, it may be, for miles along the ground by the wind until they happen on a damp place; there they stick, uncurl, open, and deposit their seeds. There is another case: a kind of Grass, in which the whole inflorescence, in the shape of a large round head, gets driven along the sands of Australia until it finds some moist spot where the plant can again take root and let fall its seeds.

Still more complicated and beautiful than the wings already seen are the tufts of down seen on many fruits and seeds, and they serve a similar purpose. This down, which forms Dandelion "clocks" and Thistle "blows," consists either of simple hairs or those provided with a feathery arrangement. It may be found attached to either the fruit or the seed. In the latter it may cover only a part of the surface, or it may entirely envelope the seed. A tuft of hairs developed from the seed is usually called a coma, from a Latin word signifying "hair." As one example of such seeds we may select Willow Herb, whose rosy flowers fringe our river banks and ditches—plants almost always found in wet or marshy districts. Each seed is tufted with silky hairs, and the opening pod, containing several of these, is a very beautiful object We are all familiar with the cotton-like hairs that show the presence of the seeds on the numerous kinds of Willow trees in early spring or summer. Here the seed nestles amid an almost perfect envelope of hairs. The Asclepias, or American Milkweed, has seeds tufted at one end like those of our own Willow Herb. The cotton of commerce consists of long, hair-like cells from the seeds of Gossypium, the Cotton plant, one of the Malvaceæ, or Mallow order. Each thread is really a cylindrical cell, often very long, which, when dried, flattens out and twists spirally. By this peculiar outline cotton can always be detected under the microscope.

When the hairs form a tuft on the fruit, we speak of them collectively as a pappus, from a classical word signifying "an old man," in allusion to the grey colour. The ripe carpels or fruits of Pasque-flower Anemone and of wild Clematis are furnished with a feathery tail, which is in reality the long style covered with silky hairs. The long, feathered, graceful fruits of Clematis festoon our hedges in autumn, and are known popularly as Old Man's Beard or Traveller's Joy, and are among the most lovely of our country sights. In the Red Valerian of our gardens, now wild in many places, the calyx unrolls, after flowering, in the shape of a feathery cap for the fruit, which can thus be easily carried about by the wind. If you examine a single fruit from the thick, dark-brown spike of Reed Mace or Bulrush (Typha), you will see that it ends below in a very delicate stalk, around which, at three or four different places, arise a series of circles of fine silvery hairs, which support the tiny fruits in the air. The softness of the spike is due to the presence of multitudes of fruits, each provided with these hair circles.

The Cotton Grass of our moors is another example. It is not a true Grass at all, but is the genus Eriophorum, belonging to the Cyperaceæ, or Sedges. Its fruits have a tuft of long, silky hairs springing from the base, and we often see a marshy landscape white with thousands of these hair-covered fruits.

The pappus as an air-floating device, however, reaches the climax of beauty and adaptation in the Compositæ. the order including Thistle, Dandelion, and very many other plants. Examine a head of Dandelion early in its history, and you see nothing of any pappus; but look at it later on, and you will see in the place of the many florets that made up the so-called "flower" a spherical collection of beautiful hairs which form the "clock" of the children. Each single fruit is prolonged above into a long stalk or beak (very much longer than the fruit itself), at the top of which is a close-set circle of delicate hairs arranged laterally, so as to form a kind of parachute, concave above. This parachute bears up the fruit and acts as a sail for it, and being by far the lighter end of the whole, causes the fruit to fall to the ground in the best position for its burial—namely, with the fruit itself downward. Most assuredly this wonderful contrivance for dispersing the seeds is the reason why Dandelion is as common as it is. "A common weed!" we say. Exactly; and it is a common weed because it is a highly adapted type, as Grant Allen tells us.

In the Hawkweeds—relations of Dandelion—the pappus is not raised on a beak, but is close down on the fruit, and is not so widely expanded, being more funnel-shaped. In Dandelion and Hawkweed the hairs are simple; but in the Thrincia of our lawns (which some people will call Dandelion, but which is only a near relative), they are every one feathered. This is carried to the furthest point in Tragopogon, or Goat's Beard, called "John Go-to-bed-at-noon" by country folk, because it closes at mid-day. Here the hairs are not only feathery, but the feathery branches interlace all round the circle, so as to form a very powerful propeller under the influence of a breeze. All these contrivances, whether found on fruit or seed, are evidently developed by natural selection, in order to the better dispersion of the life-containing germ.—H. W. S. Worsley Benison, F.L.S. (in *the Journal of Microscopy*).

(To be continued.)

HORTICULTURAL SHOWS.

FROME.—August 6th.

This was a decided success, and that too in spite of rather unfavourable weather. In the plant tent especially there was a marked all-round improvement observable, nothing but a few well-trained specimen flowering plants being wanted to make the exhibition equal to any held in Somerset and surrounding counties.

The principal prizes were offered for banks of plants arranged on a space 12 feet by 6 feet. Of these there were no fewer than five competitors. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, was placed first with a rather heavy arrangement, which included numbers of choice Crotons, fine Palms, several large and well-flowered Eucharis amazonica, Ferns, and other plants. The second prize was awarded to Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, for a much lighter arrangement, but which was scarcely imposing enough at the back. The bank was largely composed of elegant well-coloured Crotons, Pandanuses, Dracænas, Palms, with Lilium auratum, Pancratiums, Orchids, and Tuberous Begonias springing out of a groundwork of Maidenhair Fern. The third prize was well won by Mr. E. Brown, gardener to C. Baily, Esq., Frome, and very creditable groups were also arranged by Mr. Phillips, gardener to John Baily, Esq., Fairlawn, Frome, and Mr. S. Andrews, gardener to A. G. Hayman, Esq., Hapsford House, Frome. Mr. Pratt was placed first for six fine-foliaged plants, among which was a very fine Latania borbonica, the second prize going to Mr. Iggulden.

for smaller, but better matched Palms and Crotons. Mr. Brown took the first prize for a single specimen fine-foliaged plant with a good Cycas revoluta, Mr. Pratt being second. There was only one entry in the class for six flowering plants, this being by Mr. G. Tucker, gardener to Major Clarke, Trowbridge, who was rightly awarded the first prize. Among these were good plants of Erica grandiflora alba, Allamanda Hendersoni, Dipladenia amabilis, and Statice profusa.

In the class for four Orchids Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, was first with strong well-flowered plants of Cattleya labiata, Cattleya Loddigesi, Odontoglossum Alexandræ, and Cattleya crispa. Mr. Iggulden was second for smaller plants, some of the flowers being past their best. There were two groups of six Fuchsias, both being highly creditable to the exhibitors. Mr. Brown was well first for specimens 7 feet high and beautifully flowered, the second prize going to Mr. Edwards, gardener to J. D. Knight, Esq., Frome. Gloxinias were also staged much better and in greater numbers than usual. Mr. Edwards was first for fine plants. The class for six Tuberous Begonias was well filled, and in this Mr. W. Bull, gardener to Captain Tucker, Keyford House, Frome, took the lead with compact, beautifully flowered plants of superior varieties. This exhibitor was also well first for six trained Zonal Pelargoniums and for six Coleuses, the competition being good in each instance. The collections of Ferns were quite a feature in the principal plant tent, the first and second prize groups of twelve varieties being nearly of equal merit and very fresh and good. Mr. G. Tucker was placed first, his best being Gold and Silver Gymnogrammas, Adiantums cuneatum, gracillimum, and Asplenium Nidus-Avis. Mr. E. Brown was second, having among others capital plants of Adiantums farleyense, gracillimum, grandiceps, and Dicksonia antarctica. Mr. Edwards was third. Mr. E. Wilcox, gardener to Mrs. Sinkins, Portway House, Frome, was first for six Ferns, Mr. J. Weston, gardener to the Rev. C. C. Layard, Bath, second, and Mr. W. Bull third.

Cut flowers were very well shown, the Roses being unusually good for the time of year. The best twenty-four distinct varieties were staged by Messrs. Keynes, Williams & Co., Salisbury, their stands including fine massive and well-coloured blooms of Merveille de Lyon, Ulrich Brunner, Marie Verdier, Boieldieu, Alfred Colomb, La France, J. S. Mill, Alphonse Soupert, A. K. Williams, Mrs. J. Laing, Madame Lambard, C. Lefebvre, Jean Soupert, Marshal P. Wilder, Heinrich Schulteis, and The Bride. Dr. Budd, Bath, was second, among his being a very fine bloom of Madame Lambard, and good Marie Baumann, Alfred Colomb, A. K. Williams, and Earl Dufferin. Messrs. G. Cooling and Son, Bath, were third. The first prize for twelve varieties was also won by Messrs. Keynes, Williams & Co., among these being extra good blooms of Beauty of Waltham, La France, Alfred Colomb, Mrs. Harry Turner, and Her Majesty. Messrs. G. Cooling & Son were second, and Dr. Budd third, both having capital blooms. The best collection of twelve varieties of cut flowers was staged by Mr. W. Iggulden, who had Orchids, Anthuriums, Ixoras, Dipladenias, and other choice flowers well set up. Several others had good stands of cut flowers, notably Mr. Tucker, who had the second prize, and Mr. W. Strugnell, gardener to A. R. Baily, Esq., who made a slight mistake in setting up, and lost the second prize in consequence. The last-named was well first for a collection of hardy flowers, and also for vases of choice cut flowers and wild flowers, as well as a hand bouquet displaying excellent taste in each instance. The competition was good in all these classes.

Fruit was not largely shown. Mr. Pratt was first for a collection of six dishes, these including fine bunches of Black Hamburgh and Muscat of Alexandria Grapes, Smooth Cayenne Pine Apple, Melon, Peaches, and Nectarines. Mr. W. Iggulden was second, and Mr. Phillips a creditable third. Mr. Pratt had fine bunches of Black Hamburgh Grapes and was placed first, the second prize going to Mr. Iggulden, and the third to Mr. W. Strugnell, each having smaller but well finished bunches of the same variety. Mr. Pratt was also first in the class for white Grapes, having Muscat of Alexandria, large in bunch and berry but not well finished. Mr. Iggulden was again second. The last named was first in class for a Melon any variety, winning with Blenheim Orange in perfect condition. Mr. Pratt was second with Longleat Perfection, a good green flesh variety not often excelled. Mr. Phillips was first for Peaches, winning with a good average dish of Stirling Castle, the second prize going to Mr. Pymm for a good dish of Barrington. A grand dish of Exquisite, staged by Mr. S. Andrews, gardener to A. G. Hayman, Esq., was passed over on account of its being of doubtful quality, but this decision was far from meeting with general approval. Several good dishes of Tomatoes were staged, but Mr. Iggulden was well first with a handsome dish of Hackwood Park Prolific. Mr. Phillips was first for a brace of Cucumbers, and a capital lot of vegetables generally were staged. Messrs. Sutton & Sons offered prizes for a collection of six varieties of vegetables, and with these Mr. S. Andrews was well first, having Tomato Reading Perfection, Potato Snowdrop, Cauliflower Sutton's King of the Cauliflowers, Cucumber Sutton's Improved Telegraph, Carrot Champion Horn, and Peas Telegraph. In another class in which the prizes were provided by Messrs. Webb & Sons, Stourbridge, Mr. T. Evry, Bath, was first, having Tomato Webbs' Sensation; Potato, New Discovery; Pea, Webb's Chancellor; Cauliflower, Erfurt Mammoth; Runner Beans, Webb's Giant White; and Cucumber Telegraph. There were good numbers of exhibits in each class.

LEICESTER.

The third annual Show in the Abbey Park was held on August 7th, which proved to be a glorious summer day, of which we have had very few in the Midland counties this season. The Show would have been much more enjoyable without so much sun, the heat in the tents being at times almost unbearable. This was owing to a great deficiency of ventilation, and Roses and other cut flowers soon showed ill effects. The Show is held for the worthy purpose of assisting the funds for providing music in the park for the inhabitants of Leicester and other visitors during the summer months, and the people patronised it well, the number of visitors probably exceeding that of last summer, when over 20,000 people were admitted, so that a good balance will be available for the above purpose. Leicester people appear to be very proud of their park, and it certainly deserves to be appreciated to the fullest extent, being tastefully laid out and kept in excellent order by the curator, Mr. John Burn, who well deserved the praise accorded him by the Mayor when he opened the Show to the public. Mr. Burn gives much attention to all matters connected with the Show, which must give him a great deal of extra work, and it was not surprising that he was taken ill before the staging was completed, causing a considerable delay in opening the Show. It is not a good plan for one person to have so much to attend to, as a breakdown is liable to occur when the pressure is greatest, and the consequences may be serious. However, we were happy to find he had recovered sufficiently during the day to visit the Show. A falling off was noticed in some of the classes this season, but considering the small amounts of some of the prizes the competition in many instances was remarkably keen. This was especially noticeable in vegetables and Roses. Shows like this that are so largely attended possess a great power for good instruction of the minds of the public, and it would be well for the Committee to consider the advisability of extending this good influence by offering larger prizes in some of the classes for plants, in order to induce a few more exhibitors to attend from a distance. This would benefit the neighbourhood in many ways, not the least of which would be the improvement of horticultural knowledge, and also of the gardens and their owners, which would naturally follow.

The groups were arranged around the sides of a tent in half circles, Mr. Elworthy, gardener to W. Billson, Esq., taking the first prize. This group was well arranged, fresh and bright, and well finished to the margin. Mr. Murray, gardener to S. Bennett, Esq., was a good second, but had rather too many plants, and not enough colour in the outer part of his group. Third, W. Stephenson, Leicester; fourth, Messrs. J. & H. Hickling. The classes for six stove and greenhouse plants and for four foliage plants was very poorly filled. For six exotic Ferns, Mr. Barry, gardener to H. Snow, Esq., was first with even plants, closely followed by Mr. Elworthy, second, and Mr. Stephenson, gardener to J. Stafford, Esq., third. Amongst the other classes for plants some good Fuchsias and Coleuses were exhibited. Orchids were almost absent except in the group which occupied the centre of one tent, kindly sent by Mr. B. S. Williams, nurseryman, Holloway, London, not for competition. This comprised some good varieties of Cattleya Gaskelliana, C. gigas, C. Schilleriana, and C. crispa. Odontoglossum vexillarium very good in colour, Oncidium violaceum, Anguloa Ruckeri, Masdevallia Harryana, and finished off with Palms, Dracænas, Alocasias, Amaryllises, Nepenthes, &c., making a very interesting group.

Amongst the cut flowers, which were very numerous, especial mention must be made of several magnificent boxes of Carnations and Picotees sent by Mr. Turner of Slough, who easily took all the first prizes in the open classes; Messrs. Beal, Jackson, and Niemand securing the other prizes in these classes. The first prize variety in the class for single blooms was Carnation Charles Turner and Picotee Favourite. Hardy herbaceous flowers were a strong class, some of the stands containing Pinks, Carnations, Chrysanthemums, Lupinus arboreus, &c., requiring a good deal of elasticity in classification if they are to be considered herbaceous plants. Messrs. Pearson & Son, Chilwell, were first: Messrs. Biddles, Loughborough, second; Messrs. Harkness of Bedale third. A good bunch of yellow Sweet Sultan seemed to attract the ladies' attention more than anything else in this class. Achillea millefolium rosea in Messrs. Pearson's stand was also very conspicuous. Mr. Forbes, Buccleuch Nurseries, Hawick, kindly brought a quantity of very fine Antirrhinums, Delphiniums, Violas, and Pansies in great variety, not for competition, also Phloxes, which were crowded out. The long journey and the unbearable heat of the tents had told seriously on these, which would otherwise have proved a very interesting exhibition. Roses mustered strongly, and consequently some of the exhibitors showed a quantity of boxes of capital flowers without winning a place in the prize list. For thirty-six blooms Messrs. Harkness of Bedale were first with splendid blooms and very fresh, some of the best being Ella Gordon, Etienne Levet, Horace Vernet, Her Majesty, Reynolds Hole, Duc de Rohan, Marie Baumann, &c. Second, Messrs. Perkins and Sons, Coventry, larger flowers, but not so fresh. Third, Messrs. Mack and Sons, Catterick, fresher than the second prize bloom, but some rather small. In the class for twenty-four blooms Messrs. Perkins turned the tables on Messrs. Harkness, whose flowers were smaller, although very good on the whole; Messrs. Perkins' collection here being very good. Messrs. Mack again took the third prize. For twelve Teas or Noisettes Messrs. Harkness were first, Messrs. Paul second, Mr. Humphries, Chippenham, third. For twelve blooms of one variety, Messrs. Mack & Sons, Catterick, were first with a splendid box of A. K. Williams. Second, Messrs. Harkness with Ulrich Brunner. Third Messrs. Paul & Son with Marshal P. Wilder. Messrs. Pearson exhibited some splendid boxes of their celebrated Zonal Pelargoniums. Hand bouquet, first, Messrs. Perkins & Sons, Coventry, with a light and pretty arrangement. Second, Hans Niemand, Birmingham, whose

bouquet of yellow Roses and dark leaves was very much admired, and preferred by some to the first prize. Third, Messrs. Pearson. Bridal bouquet, first, Messrs. Perkins, with a splendid specimen. Second, Hans Niemand. Wreath of white flowers, first, Messrs. Perkins, with a very massive wreath, well finished in every way. Second, Messrs. Pearson, with a very pretty arrangement. For sprays Hans Niemand was deservedly first, his third being as near perfection as possible. Messrs. Perkins were second.

Fruit was well shown, Mr. Edmonds, gardener to the Duke of St. Albans, taking first prize for a collection of eight dishes with Black Hamburgh and Muscat of Alexandria Grapes (very good), a large Queen Pine, good Grosse Mignonne Peaches, Brown Turkey Figs, May Duke Cherries, and Best of All Melon, &c. Second, Mr. Goodacre, gardener to the Earl of Harrington, who had among other things a very large Pine, which, however, was not quite ripe, a fine Hero of Lockinge Melon, and a plate of Cherries, named Le Château, which were worthy of especial notice. Third, Mr. J. Crawford, gardener to Colonel Thorpe. For two bunches of Black Hamburgh Grapes, Mr. J. Ward, Alfreton, was first; Mr. Edmonds second, but very little behind the first except in weight. White Grapes were not well coloured. Peaches, Nectarines, and Melons were well shown.

Vegetables formed a very large show in themselves, no less than thirty-six collections being exhibited in the four classes. Peas were strongly represented, and how the Judges arrived at a decision would be difficult to say; nineteen plates were shown, the majority being too old for good flavour. Broad Beans were very fine, and the spring Onions were large enough to have been sown in the autumn. In the cottagers' tent, Messrs. Harrison exhibited an interesting collection of Cabbages and Onions, the latter being grown at their seed farm in Italy, and were very fine bulbs. A great quantity of vegetables was shown by the cottagers, many of them being of good quality. The wild flowers and baskets of cut flowers were also very pretty, but as is usual in this tent very closely packed together by those who tied them up. It is to be hoped some of them took a lesson from the open classes before leaving the Show. In order to develope taste and knowledge among the cottagers it would be well to stage their exhibits nearer to the open classes of the same character.—J.

HURSTPIERPOINT.

This Society held its second annual show at the Chinese Gardens on the 8th inst., and considering the extraordinary season we have had, and its coming so soon after the "wettest July on record," they may well be satisfied with the result of their labours. Over 100 exhibitors entered, and the number of exhibits was considerably greater than last year. Like all local shows the great object is to promote cottage gardening, and a list of the prizewinners would not be of interest to the widely scattered readers of the Journal. These societies, however, do so much good that I sometimes think they should have a little more notice taken of them by the Horticultural Press than is generally the case. "A Wanderer" has been giving his experience amongst "Black Pigs and White Elephants." No doubt those who judged the cottage gardens for the above Society could relate similar experiences, for the inhabitants of snug little towns at the base of the Downs evidently believe in both. When coming out of the show tent I ran up against an enthusiast carrying a tray, on which was arranged a little family of Elephants to the number of seventy—the produce of one tuber planted whole. The show of vegetables was very good in all classes, with the exception of Runner Beans, and Cauliflowers were not a very good sample. Messrs. Sutton's prize for a tray of vegetables was won by Mr. F. Godby of Burgess Hill, the same gentleman taking first for black Grapes with compact, well coloured bunches, and also first with well-grown plants of Fuchsias. For a group of plants first place was given to G. F. Wickham, gardener to J. Humphry, Esq., Keymer. Most taste in arrangement was displayed in the second prize group with very ordinary material, while the best lot of plants was placed third, the arrangement being extremely stiff. A. Bisk was first for six specimen plants for small, healthy, well-grown plants, and also for six Gloxinias with splendid plants.

There was a good contest for Messrs. Balchin's prize for hardy herbaceous flowers, W. Manton being the fortunate winner. A very interesting feature was the class for a basket of cut flowers for ladies only. There were nine entries, and when the ladies were present there was little chance of one of the sterner sex getting a peep at them. Light graceful arrangement distinguished the two winning baskets of Miss Hannington and Miss K. Broad. Messrs. Balchin of Hassocks Nursery sent a neat group of plants not for competition, as did also G. B. Woodroff, Esq., the latter gentleman showing splendid bunches of Muscat and Black Hamburgh Grapes, also not for competition.

The Committee of this young Society are fortunate in four respects:—First, in having the substantial support of so many of their local townsmen in giving special prizes. Legs of mutton, pairs of boots, &c., as well as money prizes, are worth trying for in these hard times, and is an example that might well be followed by some of their neighbouring towns where there are similar societies but scantily supported in that respect. Secondly, in Mr. Niel they have an excellent Hon. Secretary. Third, in securing the services of two such experienced superintendents as Messrs. Richardson and Bunny; and last but not least, in Mr. W. Wood they have an admirable Chairman and Treasurer. The weather on this occasion was simply splendid, and has continued so since.



HARDY FRUIT GARDEN.

Ripe Fruit and its Protection.—Fruit generally has coloured, or is colouring well, and is of good size, but in most instances it is unusually sour. Red Currants are perfecting a remarkably heavy crop of fruit, and as this will hang for a long time after it is ripe extra care should be taken of all that is not wanted for immediate use. Where the clusters are very thick they ought to be freely thinned, otherwise the fruit is liable to decay in a wholesale manner. Birds must also be excluded from them, either with the aid of fish-nets or mats, and thus protected the fruit will sometimes keep good till late in October. Black Currants do not long hang on the bushes, and these also ought therefore to be gathered, some being made into jam, and many more bottled off whole, corked up tightly, and then immersed in water in a pan or copper, care being taken to divide the bottles so as to prevent their banging against each other. Set on a steady fire; gradually heat to boiling point. Keep the water steadily boiling for about half an hour, and allow it to cool before taking out the fruit. Thus treated Red and Black Currants, Gooseberries, Raspberries, and Cherries will keep a long time, and when made into pies are equal in flavour to quite fresh fruit. Gooseberries, as a rule, do not hang on the bushes any great length of time after they are ripe, the most noteworthy exception being the Red Warrington. The bushes of this variety ought always to be grown in a plot together, where they can be protected by either fish-nets or galvanised wire netting, supported by a framework of some kind. The larger smoother varieties crack badly in showery weather, and these ought therefore to be protected from rains as much as possible. Mats will keep out a moderate amount of moisture, but are not nearly so effective as spare frame lights fixed over any extra good crops of fine fruit.

Wall Fruit.—Cherries have cracked badly, more especially those that ripen in July. Florence, a good type of Bigarreau, though much later, is yet sound and good, and in all probability will keep till late in August. It is one of the best for wall culture, and will be available when all other choice varieties, including the good-keeping Governor Wood, are over. Morellos are very late, and where they have set thickly and not been thinned, will be small. They hang for several weeks on the trees, and should be closely netted, or the birds will soon clear them off. Plums are swelling rapidly, and promise to be larger than usual. In many instances they have set so thickly that unless freely thinned out none of the fruit will be of good quality. It is rather late to commence thinning, but it had better be done now than not at all, especially in the case of Guthrie's Late Green Gage, Kirke's Washington, Jefferson, Reine Claude de Bavay, Coe's Golden Drop, Blue Impératrice, Ickworth Impératice, and any other late-ripening variety. The three last-named will hang the longest on the trees, and ought therefore to be the last to be used. None of the Gages keep very well, and these, Jefferson, Oullins Golden, and other choice but bad-keeping varieties should be largely gathered, and made into preserve when nearly ripe. Apricots are fast changing colour, and these again keep badly. Some of the most valuable preserve is made from this fruit, and it need not be very ripe for the purpose. Slugs are very troublesome among Apricots and stone fruit generally, eating or disfiguring many just when changing colour. They ought either to be looked after at night with a lamp and destroyed, or else trapped with the aid of slates or heaps of Cauliflower leaves laid at the foot of the walls. Little heaps of brewers' grains also are a great attraction to slugs, and will save the wall fruit. In dry weather, if the borders near the wall are heavily dressed with soot and lime occasionally this will greatly check the slugs. Snails are frequently troublesome, but as these usually remain on the walls or under the foliage of the trees they must be hunted out and crushed.

Summer-pruning of Pear Trees.—Many experienced fruit growers are of opinion that July is too soon to resort to summer pruning, at any rate as far as the use of the knife is concerned. If the stopping is not done early with the finger and thumb the pruning is delayed till the early part of August. Pruned much earlier the effect is merely to induce the formation of many more sappy branches, whereas when delayed till now there is much less likelihood of this occurring, and the trees are encouraged to concentrate their vigour towards swelling off the fruit, and the formation of numerous well-placed fruit and wood buds. As far as large pyramid and bush-trained trees are concerned, these being less liable to smother the fruit with growth, little or no pruning need be done till the foliage has fallen, but the wall trees ought to be attended to. All the young growths not required for furnishing on unoccupied space ought to be pruned to a length of from 5 to 6 inches, or cut say just beyond the sixth or seventh joint. When cut much harder there is a risk of converting those at the back joints into wood rather than fruit buds, and it may be force many of them to start into growth prematurely. The final pruning should then be delayed early in the winter. Leading shoots, including those to form more main branches, must be carefully fastened to the walls, and kept as straight as possible. If this training is delayed till the wood becomes

firm it cannot subsequently be done without the risk of snapping them in two. Owing to the lateness and softness of the central growth of espalier or horizontally trained trees it is not advisable to shorten these back with the motive of securing a second pair of branches in one season. No doubt these would form readily enough, but it is very doubtful if such late growth would ripen properly this season, and unripe wood is not suitable for laying the foundation of a profitable tree. Summer Doyenné or Doyenné d'Eté will soon be ripe, and though small is very good in quality if gathered and eaten at once. Citron des Carmes is a little larger and somewhat later, and this also must be eaten direct from the trees, as when kept it soon becomes dry and mealy.

FRUIT FORCING.

Peaches and Nectarines.—*Early Forced Trees.*—Trees that have been subjected to early forcing for a number of years acquire a tendency to premature development; notable in this respect are Early York and other varieties, particularly those having large flowers. This can only be prevented or lessened by allowing a moderate extension of the laterals, exposing the trees to the air by the removal of the roof lights, or it may be arrested by the maintenance of a dry atmosphere and a somewhat dry condition at the roots, but this tends to cause premature ripening of the foliage, and subsequent wholesale loss of the buds, being worse than the loss of a few buds from premature growth. With the trees fully exposed the foliage will ripen freely, and where the roof lights are not moveable admit air to the fullest extent, maintaining a good moisture in the borders, damping the house occasionally in hot weather. Some of the foliage of the trees in the earliest house, or that started in November or early December, will now or shortly begin to fall; but do not accelerate this by brushing the trees, only remove such as are ripened for the purpose of destroying insects. Trees showing indications of weakness should have the roots bared and the soil removed, supplying some rich rather strong calcareous soil, adding marl if the soil be inclined to be light, or old mortar rubbish if it is heavy, working it well amongst the roots, and making it quite firm, following with a good watering. Damping the trees occasionally will facilitate speedy root action, and in case of lifting the roots, as may be necessary if they are deep, and laying them in fresh soil nearer the surface, shade from bright sun will be necessary, with a rather close and moist condition of the house.

Preparing for Planting.—It is too early as yet to plant fruit trees, yet all trees for Peach houses should be removed thereto before the leaves have fallen; indeed, as soon as the wood is in a condition to admit of it without danger of shrivelling. It is not, however, too early to select the trees for planting, having them marked at the nurseries for removal when in a suitable condition. Select those that have the branches evenly balanced, and have short-jointed, vigorous, but not over-luxuriant wood. Some of the best and most reliable for early forcing are Hales' Early, A Bec, and Royal George, or its hardier form, Stirling Castle. The best companion Nectarine is Lord Napier. If fruit is required very early, then such varieties as Alexander, Waterloo, Early Beatrice, Early Louise, and Early Rivers may be planted; the quality of those is not equal to the others, though the last three are superior in that respect to the first two—*i.e.*, Alexander and Waterloo, the chief recommendations of which are their extreme earliness and good appearance. For succession houses, Peaches Grosse Mignonne, Noblesse, Bellegarde, Belle Bauce, Goshawk, and Barrington. Nectarines Elruge, Violette Hâtive, Rivers' Orange, and Pine Apple. Late houses, Peaches Walburton Admirable, Princess of Wales, Sea Eagle. Nectarine, Victoria. It is usual to include some of the midseason varieties in the late houses, hence the few varieties named, such as Dymond and Barrington being indispensable, as also is Pine Apple in Nectarines. For wall cases a succession of fruits can be had from the middle of July by planting Alexander, Hale's Early, Stirling Castle, Alexandra Noblesse, Bellegarde, Belle Bauce, Barrington, Walburton Admirable, and Sea Eagle. Nectarines:—Advance, Lord Napier, Elruge, Rivers' Orange, Pine Apple, and Victoria.

The borders in which trees are planted for early forcing should be inside, wholly or at least partly, whilst those for later succession should have the run of outside as well as inside borders. The borders should be well drained, using 4-inch drain pipes, and having proper fall and outlet. Provide a foot depth of drainage, brickbats, sand, or freestone, or preferably chalk answer, placing the roughest at the bottom and finest at the top, the latter not being larger than broken road metal. If the drainage could be secured by a layer of old mortar rubbish 2 or 3 inches, which has been freed of the finer particles by passing through a half-inch sieve, it will be a means of preventing the roots passing so freely into and rioting in the drainage, besides affording calcareous and siliceous material and facilitating lifting operations. Good strong loam of the calcareous formations is best, the top 3 or 4 inches with its turf of an old pasture. If very light add a fourth of clay marl in as fine parts as practicable, and if very heavy a similar proportion of old mortar rubbish, but for ordinary light soil a sixth of clay marl, and for rather stiff loam a sixth of old mortar rubbish will be a fair admixture. A few crushed steamed bones, about a bushel to a cartload, or one part in thirty, will be all that is necessary to grow the finest fruit, but if the loam be not turfy add a fifth of stable manure, the strawy portions being shaken out with a fork, or for light soil cow manure may be used. The border should be 24 to 27 inches deep, and a width of 4 to 6 feet will be sufficient to commence with, and in no case need exceed the width the trees cover of trellis. The material must be used rather roughly, well incorporated, and put together when dry, so as to admit of its being well firmed. Allowance must be made for settling.

Succession Houses.—As soon as the fruit is gathered from the trees cut away the shoots that have borne fruit, unless they are extensions, and thin all the growths where too crowded. Admit air to the fullest extent, and syringe occasionally to free the foliage of red spider if any appear, applying an insecticide if necessary. The inside borders must not be allowed to lack moisture, giving a good watering if necessary, and the trees being weak and not plumping the buds well afford liquid manure.

Late Houses.—Trees in these will need frequent attention in thinning and regulating the summer growths, and if they are laid in thinner than usual it will in a measure compensate for the deficiency of sun. Gross growths, of which there are plenty this season, must be stopped or removed. Endeavour to secure a balance of moderately strong wood, and to insure the ripening as well as to improve the flavour of the fruit gentle fire heat, especially in low and in cold situations, will be of great benefit. Give attention to syringing until the fruit commences ripening, so as to keep the foliage free of red spider, and water the inside border as may be necessary.

Unheated Houses.—The hope is that the present sunny weather will last, of which every advantage should be taken, ventilating early and moderately through the day, so as to make up for lost, closing early with a view to insure a long day's work, but admit a little air at night to allow the temperature to gradually cool and the pent up moisture to escape. Keep the growths thin, and the foliage clean by judicious syringing.

FLOWER GARDEN.

Auriculas and Anemones.—Quite new seed invariably germinates more readily and the seedlings are stronger than any that result from sowing old seed, consequently care should be taken of all seed pods on both the Alpine Auriculas and Anemones. As soon as the seed is well ripened sow it on the surface of a pan filled with fine sandy soil and cover lightly. Set the pans in a handlight or cold frame and shade from bright sunshine. The Anemones germinate evenly, the Auriculas more irregularly, some of the seedlings appearing in a month or less and others much later on, and the soil ought not, therefore, to be much disturbed when the earliest seedlings are pricked out in other pans of fine loamy soil. The Anemones need not be interfered with unless very thick, and if planted out early in the spring will give a few flowers the same season.

Violets in Hot Weather.—The greatest enemy Violets have is the red spider, this in some instances completely crippling the plants. Nor does a long spell of showery weather much check the ravages of this little pest. The best remedy is to frequently syringe the plants with water to which sulphur has been freely added. A good handful to a 3-gallon can of water is sufficient, and it can be most readily mixed by being worked through a bag made of muslin or fine netting. If the leaves both on the under and upper sides are well coated with sulphur this will effectually check the red spider and a healthier growth result. Sickly foliage will not build up good crowns, and in addition is very easily killed by frost. Light land may be made more cool or better adapted to the growth of Violets by receiving occasional very light surfacings of common salt, care being taken not to let any of this fall on the leaves.

Weedy Walks.—Weeds are very abundant everywhere, and on gravel walks especially are not easily destroyed by ordinary means. A good surfacing of salt will kill a good many of them, but is not nearly so effective as Smith's weed killer. This, by no means an expensive remedy, only requires a liberal addition of cold water before its application, and never fails to destroy all weeds it comes into contact with. Full directions are sent with this poisonous compound, which should be strictly adhered to. It only remains to be added that those using it must not walk over turf or splash it in any way, or brown patches will be the result. The turf or Box edgings ought to be protected with the aid of boards slid along as the moisture is being applied. All that is necessary is to thoroughly wet the weeds and they soon disappear. In some positions every second year is often enough to use this remedy.

PLANT HOUSES.

Begonias.—If the varieties intended for autumn and winter flowering have not been placed in their largest pots it should be done at once. Insert cuttings of Begonia nitida, B. nitida rosea, B. Ingrami, and others that are useful for flowering from February to April. Cuttings of these should be placed singly in small pots to accommodate them until the close of the year, when they can be placed in 4 and 5-inch pots.

Panicum variegatum.—Prepare a number of 3 and 4-inch pots of Panicum for decorative purposes during the winter. Insert the cuttings thickly together, and if they are kept close and shaded from the sun they will soon become established. To have these in good condition they must be grown for some time after they are rooted; in fact, until the pots are filled, and then they are highly ornamental. Fittonias may be rooted in quantity for the same purpose, only these should be inserted singly, or if rooted together they may be placed into 2-inch pots afterwards. A good plan is to root them in pans and then establish them singly in bunches of moss. These, if placed thickly together in boxes with soil amongst them, are easily kept moist, and have good balls of roots when lifted for association with Selaginellas and small Ferns. This method is as good as potting them singly, for if required in pots they can be placed in them as required.

Bertolonias.—In order to keep these in good condition through the winter root cuttings at once. Plenty can generally be taken from the base without injury to the plants. Young plants raised from cuttings are easily preserved in an ordinary stove through the winter, while large

fully grown plants are very liable to die. Cuttings root freely in any light sandy soil if they are kept close in the propagating frame or under handglasses, provided they are shaded from the sun.

Sonerilas.—However good pots or pans may be at the approach of winter they are very liable to damp off before spring. The only means of keeping them safely through the winter is to strike cuttings at the present time. The best plan is to insert a number of cuttings in 3 to 4-inch pots, in which they should be allowed to grow until spring, when they will yield cuttings in abundance for making pots and pans for the ornamentation of the stove during summer.

Epiphyllums.—Plants that have completed their growth should be gradually hardened and fully exposed to the sun to ripen them, for upon this depends whether they flower profusely or the reverse. Water carefully, but do not allow the plants to suffer by an insufficient supply. Encourage in a genial temperature those that have not yet completed their growth. Plants worked in spring are still growing rapidly, and these must have a fair amount of light or they will prove too soft to flower freely.

Amaryllises.—When growth is completed Amaryllises must still be liberally supplied with water, at the same time give abundance of air and expose them to full sunshine. Make no attempt to dry them by withholding water. As the bulbs complete and mature their growth the foliage will naturally fade. Assist seedlings to grow as luxuriantly as possible, but be careful not to keep them too close or overshade them so as to draw up their foliage weakly. If the young plants have abundance of roots weak stimulants will be beneficial.

Thyrsacanthus rutilans.—Plants that are well established in 5 and 6-inch pots should be grown under cool frame treatment. If kept in the stove they soon become a prey to scale and run up very tall, which is not the case when cooler treatment is given. When they have rooted freely in their largest pots give weak soot water in a clear state about twice a week, which will impart a fine dark hue to the foliage. With good treatment this plant should have at flowering time dark green foliage down to the rim of the pots. Plants in this condition are very effective when in flower elevated above others to display their slender drooping stems of scarlet flowers.

Winter-flowering Plants.—The weather has been so cold that many stove and intermediate plants could not be shifted into cool frames. Up to the present time it has been necessary to use fire heat generally for these plants, and the pits and houses they occupy are becoming too crowded. The weather appears to have changed, and these plants must be thinned so as to give them room to develope. If care has been taken to use no more fire heat than has been absolutely necessary Poinsettias, Euphorbias and such plants will be in good condition for removal to cold frames without fear of checking them.

THE BEE-KEEPER.

PROSPECTS OF THE HEATHER HARVEST.

THE PRICE OF HONEY.

The desolate appearance of the moorlands hardly augurs well for the Heather harvest. Walking from Buxton over the moors in the direction of the "Cat and Fiddle," and striking out thence in various directions on a day having more of November than July in it, we were struck by the appearance of the Heather, which can hardly fail this year to be unusually late. The weather —cold, wet, and sunless—lends no help, and with a continuance of the same conditions for another fortnight bee-keepers will be wise to look carefully into the prospective profit before exposing their stocks to a winter's weathering on the hillsides with only a small chance of a profitable result. The Heather harvest is at the best very fatal to the bees, sudden storms sweeping them away to destruction and almost depopulating the hives ; and yet, provided the Heather is in good bloom and the weather is at all promising, the future result is worth the present risk, especially in those localities where, as "A Lanarkshire Bee-keeper" informs us, driven bees may be had in almost any quantity at a merely nominal price. With the certainty of thus being able to reinforce our stock by adding bees obtained in such a manner the winter may be looked forward to without anxiety, but where the bee-keeper has to purchase his bees at a high price, and can then with difficulty obtain them, the winter will be disastrous to stocks sent to the Heather unless the conditions are favourable. If, however, the weather during this month and next should be favourable, those bee-keepers who are able to obtain a harvest of Heather honey will reap a profit larger in proportion than in other years, where the Clover and lowland bloom has yielded a large surplus of good quality, and the price of Heather honey has in sympathy with an overburdened market fallen to a lower price than that which is usually obtainable for the cream of nectar.

It may not be out of place to remind those bee-keepers who have honey in hand that they can to a very great extent control the price this year, and that the value of good honey is certain to rise very perceptibly unless some bee-keeper's friend—possessing the power to do so—imports foreign produce, and by doing so floods the market and keeps the price at a figure which, though it may be profitable to the wholesale dealer and the middleman, hardly pays the bee-keeper a just wage for his labour and a due per-centage on his capital. We hope that patriotism may withstand the interests of the pocket, and that no importation of foreign produce will be brought about by those whose duty it is to foster the British industry.

Already the retailer is inquiring for honey. Last year the producer had to search for the purchaser. The purchaser in the past has been to a great extent the master of the situation. The bad season has changed all this, and the man who looks after his own interests will obtain a large price for his product ; but in order to do so he must be in no hurry to dispose of his surplus, but quietly await the turn of events, taking not necessarily the first opportunity of getting rid of his stock, but the rather waiting and availing himself of the first offer which will enable him to clear out at a price which shall be relatively higher in proportion, as the surplus this year has been less than in the last few preceding seasons. One-pound sections should realise at least 15d. each, and some have been disposed of already at an even higher price. Those who have kept over a stock from last year will have their reward now, while those who assisted in the autumn to flood the market, and to lower prices by doing so, will now, no doubt, regret that they sold at a sacrifice what could now be sold at a really remunerative price. At the present time we have some sections taken last summer which are in the finest condition, and which will, no doubt, realise a very high price, as we have already had more than one good offer, although the price offered has not yet tempted us to sell. Comb honey, if kept in a warm dry cupboard well covered up and preserved from mice and insects, will keep a very long time in good condition, and in many cases no perceptible granulation will be perceived, but certain kinds of honey do undoubtedly granulate almost immediately after removal from the hive. Such honey is comparatively valueless for sale in the comb, but as bee-keepers know, honey extracted from the comb may, if it granulates, be reduced to a liquid form again by judicious heating, but care must be taken not to expose it to a greater heat than necessary, because the stronger the heat the greater the loss of aroma and flavour. Granulated honey in the comb is of relatively small value ; granulated run honey may be reduced to its first state with little loss. It is for the bee-keeper to say whether the difference in price between comb and extracted honey will compensate him for the extra risk entailed in the case of comb honey, and having formed his conclusions, the individual bee-keeper must act upon them, and the result will, in the end, depend upon the wisdom of his conclusions.

In future issues it is our intention to treat of the preparation of stocks for winter, with the object of impressing upon all bee-keepers the necessity of exercising present care if they desire future success.—Felix.

TRADE CATALOGUES RECEIVED.

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Catalogue of Flower Roots, 1888.*

William Cutbush & Sons, Highgate.—*Catalogue of Hyacinths, Tulips, &c., 1888.*

Sutton & Sons, Reading.—*Illustrated Catalogue of Bulbs.*

TO CORRESPONDENTS

All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book (*T. W.*).—Our answer to your question is in the negative. We have no such work on sale.

Chrysanthemum Leaves Eaten (*W. J. M.*).—The leaves appear to have been eaten by the small caterpillar that sometimes attacks the plants, and which is the reverse of conspicuous. If you examine with care the under sides of the leaves you will possibly be able to detect the culprits and secure them.

Golden Elder (*R. A. F.*).—The leaves you enclose are well coloured examples of this easily grown and effective hardy shrub. It can be had from all nurserymen who grow trees for sale. The summer shoots are best cut closely back each autumn, as not only are the shrubs then kept dwarf, but their colour is brighter than when pruning is not resorted to.

Dressing Vine Border (*J. S.*).—If you have applied such heavy dressings of manure for many years consecutively you cannot probably do better than cover the border with lime to the depth of half an inch, and point it in lightly with a fork, not disturbing the roots of the Vines. A light dusting of soot in spring, just making the border black, would not burn the roots, but is not the border rich enough without it?

Chrysanthemum Leaves Eaten (*T. S.*).—The shoot you have sent has been punctured just below the terminal bud by a small weevil, but whether the pupa you send is one of the forms of the same insect we cannot determine, as it is in a transition state that is not peculiar to itself. We suspect also, indeed are practically certain, that the leaves have been eaten by earwigs or a small caterpillar. The plants should be carefully examined at night with the aid of a lamp.

Gloriosa superba (*T. Bickley.*)—This is the correct name of the plant you have as Gloriosum superbum. It is of climbing habit, with orange coloured flowers, and well worth cultivating in a stove or warm conservatory. It belongs to the Lily family. The genus Antigonon, of which the other plant is probably a species, is related to the Polygoniums, the plants being ornamental climbers, which some have compared to Bougainvilleas in attractiveness. They also require stove treatment.

Planting Liliums (*J. T. B.*).—If we had a number of plants of Lilium auratum just ceasing flowering, and desired to establish them in a border, and also, like yourself, "wanting the pots," we should not hesitate to turn the plants out at once into the border. We should make the soil good to a depth of from 18 inches to 2 feet, then plant the Liliums without materially disturbing the roots, 2 or 3 inches deeper than they are in the pots. Cut off any seed pods that may have formed, and secure the stems to stakes, leaving the growths to ripen naturally. It is a mistake to withhold water immediately after flowering ceases, and thus drying off the plants prematurely.

Grapes Scalded (*Andromeda*).—We have received the Grapes but not the letter of particulars which you notify having sent. See reply to "A. B. C." last week. Your Grapes also show symptoms of mildew. The moment you see any on the foliage and berries dust them with sulphur. The long term of dull weather has made both the foliage and fruit of Vines tender, and unable to resist the sudden outburst of sun, except under the most judicious method of ventilation, and in some cases light shade, such as sprinkling the glass with whitewash or covering it with netting, has been necessary to prevent injury. You should have sent sooner. Short answers are compulsory to Wednesday morning's letters, the alternative being the delay of a week in the publication of replies.

Herbaceous Plants (*T. W.*)—The term "herbaceous" has caused many disputes at flower shows, and though it is often employed in schedules without a very definite idea of its true signification, judges cannot be on safe ground if they do not construe the term literally in the absence of any qualification or special rules. The word is simply defined in one of the most recent botanical dictionaries as meaning "an annual stem springing from a perennial root," and in the majority of cases there is little difficulty in deciding whether a plant possesses this character or not. Strictly speaking, annuals and biennials would not be admissible, and all perennials that do not lose their stems every year would have to be excluded; on the other hand, the flowers of nearly all hardy bulbs could be shown in such a class. The conditions of a class ought certainly to be complied with, but too much care cannot be exercised in framing schedules to make the matter clear. The term "hardy" is really more indefinite than "herbaceous," for scores of plants might be hardy near the metropolis that could not be so described in your district, and in judging these classes the locality must be considered as well as the plants shown.

Brugmansias (*S. Oates*).—The "tree-like plants bearing large white trumpet-shaped flowers in Battersea Park" are Brugmansias. They are wintered in greenhouses If you procure some keep them rather dry in winter, or so dry as not to allow the wood to shrivel, and prune in spring (March) to a few eyes of the old wood. Water carefully or moderately until the young shoots are an inch long, then repot, disrooting (at least remove most of the old soil), and return to the same size of pot. Water carefully, just keeping the soil moist, and syringe lightly overhead with water morning and evening. Slight shade is advantageous until the potting is recovered. The pot full of roots shift into one-fourth larger in diameter, watering moderately for a time until the roots are in the fresh soil, then copiously, and syringe twice daily, directing the water against the under side of the leaves, and the pot full of roots; employ weak liquid manure. A light, airy position, and abundant waterings without making the soil sodden. Three parts light fibrous loam, half part each leaf soil and old dry cowdung, with efficient drainage. Cuttings of stubby shoots half ripe in sandy soil, in gentle heat under a handglass, shaded.

Disputed Cup (*J. W. M. E.*).—The case is so unusual and peculiar that we publish your statement, in case any of our readers learned in the law may be able and willing to give their opinion:—"Copy of Schedule, Bawtry Flower Show, 1885.—A handsome silver cup will be given by Viscountess Galway for best arranged vase of flowers by any lady. The cup becomes the property of the successful exhibitor until the following Show (August, 1886) when it must be returned to the Committee, and if again successful it becomes the *bonâ fide* property of the winner. Mrs. Egglestone the gardener's wife of Firbeck Hall, won the plated claret jug it turned out to be. There was no Show in 1886 nor in 1887. A fresh committee was formed this summer, calling itself the Bawtry Horticultural Society, and have demanded the jug. Mrs. Egglestone does not care to compete again, and is not willing to give up the jug for nothing. If you will kindly give your opinion in next week's 'Journal' you will greatly oblige." Our opinion is that the case is one for a solicitor, but if the new organisation is entirely distinct from the old, the former being dead, we suspect the present Committee will not find it easy to establish a claim for the cup; but if the Committee is a continuation of the former one, there having been no dissolution of the old Society, we should think the holder of the cup less secure in its possession.

Stocks for Roses (*Puzzled*).—You will perhaps remain puzzled till you settle the matter for yourself, for we suspect no stock can be pronounced the best for all Roses and all soils. The Rev. J. H. Pemberton, a very successful Rose grower, has given the following as his opinion on stocks in the "Rosarians' Year Book":—I. Manetti.—A strong growing stock, does well on all soils, makes good roots, but likes to assert itself. It suits some H.P.'s, but not those of the smooth-wooded Comtesse d'Oxford type, and Teas have a great dislike to it. It is easy to bud, takes readily, and makes strong plants. The maiden blooms have a tendency to coarseness, and require great care in disbudding. As cut-backs, I do not like them. This indeed is their weakest point, for they lose heart when pruned either hard or long, and break very feebly. The Manetti seems well suited to secure new Roses, for it takes well, and produces much wood for securing buds next year. II. Seedling Briar.—A good stock for all Roses, does well on clay soils, and has no equal for permanent cut-back plants. It produces maiden blooms almost too late in the season for exhibition, although as cut-backs it is quite as early as any other stock. It does not bud well, the stocks not being always straight or regular in size, so that more care is required to suit the bud to the stock than in the case of the Manetti or Briar cutting. III. Briar cutting.—Suits all Roses, does well on clay soils, has no equal for producing good exhibition blooms on maiden plants, and, moreover, early blooms. It is not so good as the seedling Briar for permanent plants, but in all other respects it is by far the best stock, being regular in growth and buds well. My opinion then is this: for permanent plants, grow seedling Briar. For maiden blooms, grow Briar cuttings. For plants to bud from, grow Manetti. If, however, I am requested to decide upon one stock in particular, I should give the preference to the Briar cutting.

Potting and Managing Camellias (*G. Welton*).—Large shifts are not good. An inch larger all around than the ball ought to be the maximum, and half an inch the minimum, and with the former allowance of root room the plants need not be potted oftener than every other year or third year if the plants grow freely, and every year when the smaller shift only is given. Potting is perhaps best done at the close of March, just when the flowering is past, and at the close of August. Both times are good. They should have a compost of three parts light very fibrous loam, the top inch of a pasture taken off with its turf, and chopped up roughly, and one part sandy peat, with a free admixture of sharp sand. The roots being very brittle the potting should be done with great care, not injuring the roots, but picking away the old soil not occupied with live roots, and freeing the surface of moss. Drain the pots efficiently—about one-fifth the depth of the pots—and

put over the drainage an inch or so of the rougher parts of the compost. Pot so that the setting on of the roots will be elevated in the centre of the pots rather higher than the rim of the pots, and pot firmly, working the soil in around the ball with a stick. The soil should be moderately dry when used; if wet, the operation cannot be properly performed. Finish off with the finer portions of the soil, and water for a few times with a rose watering pot. In case of unhealthy plants, turn them out of the pots in spring, remove all the old soil and decayed roots, but preserving any fibrous parts, and repot in the compost above named firmly, working it well in about the roots. The plants should never want for water at any season, and during their growing period very copious supplies should be given, or from March to July. After March they ought to have shade from bright sun up to September, a thin canvas or tiffany shading answering well. After June the soil should be kept moist, not watering, however, until it shows indications of dryness, then give thorough supplies, enough to moisten the ball through, and this they need all through the winter. When the buds are swelling they may be watered with weak liquid manure at every alternate watering, commencing in November if expected or likely to be in bloom about Christmas, and continuing until the flowering is over. Guano, 2 ozs. to a gallon of water is a good application, or 1 peck fresh dung of horses, sheep, or cows, and 1 peck soot to 60 gallons of water, stirring well up before use. This not only assists the swelling of the buds, but acts as a stimulus to growth, plants so treated making a vigorous growth after flowering.

Propagating Show and Fancy Pelargoniums (*Youngster*).—Cuttings may be put in and struck from March to August; the general time, however, is when the plants have done flowering, and require cutting down to make bushy plants for the next season. This generally happens from the end of June to the beginning of August. They may be successfully propagated in a frame set upon a spent hotbed, first removing the soil and replacing it upon a thick coat of coal ashes to keep out the worms. Upon this place a layer of sawdust to plunge the cutting pots in. The best soil is pure loam mixed with silver sand. Five inches wide at the top is a proper size for the pots, which must be well drained. Fill them to the top with the prepared loam, which should be put through a rather coarse sieve to take out the stones. It should not be pressed down too hard, but made firm enough to hold the cuttings fast. Use it in a state neither wet nor dry. The side shoots which have not flowered, and are not more than 2 inches long, make the best cuttings. These should be cut off close to the stem. If taken off with a sharp knife they will not require to be cut again at the bottom, unless the cutting is too long; then they should have a clean horizontal cut just under a joint to make the cutting the right length. Cut off the bottom leaves close to the stem, leaving only two of the uppermost. Place the cuttings in a shady place to dry up the wound. This will take an hour on a dry day, or two hours on a dull, cloudy one. Then put them in the prepared pots round the edge, inclining the leaves inwards, so that they may not touch the leaves of those in the contiguous pots in the frames or in the propagating house. When a pot is filled give a gentle watering, and set it on one side to evaporate the moisture on the leaves and surface of the soil. Then plunge the cuttings in the frame, and shade them from the sun till they form a callosity (a swelling at their base). After that, reduce the shade gradually, using it only during bright sunshine. A little air may also be given every day by tilting the lights behind. The cuttings must be frequently examined to see if roots are formed; and as soon as they are an inch long place them into 60-size pots. A small addition of well-decomposed leaf mould may be mixed amongst the loam with advantage. When potted give another gentle watering, and replace them in the frame; renew the shading, but disuse it as soon as it is safe to do so, and then give plenty of air to prevent their being drawn up and spindly. To cause them to become bushy plants nip off the top bud; the lower side buds will then break, and the shoots from them must be again stopped as soon as they have made three leaves. The plants will then be ready for a second potting, and should be removed into the open air. The above directions, as far as the cuttings are concerned, relate only to the show varieties, as they are called; but fancy varieties are more difficult to increase by cuttings. Insert the cuttings of these in shallow pans, 1½ inch deep, with a hole in the centre, in the usual loam and sand, placing them on a shelf in the propagating house, or in the frame close to the glass upon inverted pots. Make the cuttings very short, with a portion of the old wood at the bottom of each. Very little water is to be given till the callosities are formed; afterwards give it more freely, and when roots appear immediately pot the young plants and give the usual treatment.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. C. C.*).—1, Diplacus glutinosus; 2, Begonia metallica; 3, Fuchsia procumbens. (*J. S. U.*).—1 and 4 were not sufficiently fresh for recognition; 2, Scrophularia aquatica; 3, Euphorbia helioscopia. (*H. J. E.*).—Lilium lancifolium rubrum, a good variety, highly worthy of culture. We are obliged, by your encouraging letter. (*A. C.*).—The specks on the leaves appear to be of a fungoid nature, the result possibly of the wet season. The Spiræa is S. callosa. (*A. W.*).—One of the conditions upon which we undertake to name plants is that the specimens be accompanied by flowers. We can only suggest that 1, 2, 3, and 4 are Odontoglossums, 5 is probably Epidendrum vitellinum, and 6 resembles a Cymbidium. (*W., Berks*).—The Orchid, we think, is Epidendrum variegatum. The Miltonia is not specially subject to the spotting of which you complain; perhaps it has been too freely watered over the foliage. (*H. E. M.*).—The leaf is like a small example of Clianthus puniceus; the Californian flower was too much damaged to be recognised.

COVENT GARDEN MARKET.—AUGUST 15TH.

BUSINESS quieter, and prices generally lower.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	0	0	to	0	0	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	2	0		6	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	0	0		0	0	Peaches, dozen	2	0		10	0
Currants (Red), ½ sieve	1	6		3	0	Pears, dozen	0	0		0	0
,, (Black), ½ sieve	2	0		3	0	St. Michael Pines, each	3	0		5	0
Grapes, per lb.	1	6		3	0	Strawberries, per lb.	0	0		0	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	4		0	7	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	2	0		3	0	Mignonette, 12 bunches	1	0		3	0
Asters, dozen bunches	2	0		4	0	Pansies, 12 bchs	1	0		3	0
,, French, per bunch	1	0		1	6	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	0	0		0	0	,, scarlet, 12 trusses	0	4		0	6
Bouvardias, bunch	0	6		1	0	Pinks, various, 12 bunches	2	0		6	0
Calceolaria, 12 bunches	4	0		6	0	Polyanthus, 12 bunches	0	0		0	0
Camellias, 12 blooms	0	0		0	0	Pyrethrum, doz. bunches	2	0		4	0
Carnations, 12 blooms	1	0		2	0	Roses, Red, 12 blooms	0	6		1	0
,, 12 bunches	4	0		6	0	,, (outdoor), 12 bchs	2	0		6	0
Cornflower, 12 bunches	1	6		3	0	,, (indoor), dozen	0	6		1	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	0		2	0
Eucharis, dozen	3	0		6	0	,, yellow	2	0		4	0
Gardenias, 12 blooms	1	6		4	0	,, (Moss), 12 bunches	4	0		9	0
Lapageria, coloured, 12 blooms	1	0		1	6	Stephanotis, 12 sprays	1	6		3	0
Lavender, 12 bunches	3	0		4	0	Stocks, 12 bunches	4	0		6	0
Lilium candidum, per bunch	0	0		0	0	Sweet Peas, dozen	3	0		6	0
,, 12 blooms	0	0		0	0	Sweet Sultan, 12 bunches	2	0		4	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tropæolum, 12 bunches	1	0		2	0
						Tuberoses, 12 blooms	0	6		1	0
						Gladiolus, 12 sprays	0	6		1	6
						White Lilac, per bunch	0	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen pots	3	0	to	9	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	0	0		0	0
Balsams, per dozen	3	0		6	0	Heliotrope, dozen pots	3	0		6	0
Calceolaria, per dozen	4	0		5	0	Ivy Geranium	3	0		6	0
Cineraria, dozen	0	0		0	0	Hydrangea, dozen	9	0		18	0
Coleus, dozen	2	0		4	0	Lilies Valley, dozen	0	0		0	0
Crassula, dozen	9	0		18	0	Lilium, various, doz. pots	12	0		21	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	6	0		12	0
,, viridis, dozen	12	0		24	0	Mignonette, per dozen	4	0		6	0
Erica, various, dozen	0	0		0	0	Musk, dozen pots	0	0		0	0
Euonymus, in var., dozen	6	0		18	0	Myrtles, dozen	6	0		12	0
Evergreens, in var., dozen	6	0		24	0	Nasturtiums, per dozen	3	0		6	0
Ferns, in variety, dozen	4	0		18	0	Palms, in var., each	2	6		21	0
Ficus elastica, each	1	6		7	0	Pelargoniums, dozen	6	0		12	0
Foliage Plants, var., each	2	0		10	0	,, scarlet, doz.	3	0		6	0



HARVEST TIME.

THE long spell of unsettled weather, a summer temperature below the average, and the sky overcast week after week, have combined to render our expectations of a late harvest a certainty. Writing as we do, however, on the third day of hot, bright, and apparently settled weather, we feel hopeful that, though late, it will on the whole prove an abundant harvest. It is true, as usual, that there are those who take a very gloomy view of the outlook, and predict a great disaster for farmers, but we are not in sympathy with them, and prefer always to take as bright a view of things as possible. No doubt the rain has done harm as well as good. We know of more than one lamentable instance of hay having been

carried away by floods; of Clover and Trifolium seed spoilt by unavoidable exposure to rain after it had reached maturity; of winter Peas sprouting from similar exposure, or falling from the pods from being overripe before it was possible to cart the crop.

We had to break off after writing our first paragragh for a journey by rail and road through West Suffolk into Cambridgeshire and Essex. Of corn damaged by weather we saw very little, but we are bound to mention a large field or two of Square-head Wheat on a heavy land farm on the borders of Cambridgeshire which had suffered somewhat from stormy weather. The crop was a fine one, with large bold ears, and wherever it was at all thin upon the land it had been so blown about by high wind that quite a third of the ears were bruised sufficiently to prevent full development of the grain, and the brown husk betokened checked growth and premature ripeness. Other Wheat, both Red and White, with more slender ears was not so affected, and we could therefore only come to the conclusion that the full, heavy ears of Square-head, being very soft and tender from the humid atmosphere in which they have been developed, were consequently more liable to damage when blown about violently by high wind, and wherever it was a very thick and full crop there was little, if any, of it so damaged.

Barley is generally a fine full crop, and where it is exceptionally heavy much of it is beaten down. There is an old saying that "Laid Barley is made Barley." We hope it may prove true now for we have much "laid Barley." We have seen a little ergot in some fields of Barley, and only a little. Last year, when going through some Barley just before harvest in light summer attire, we had ample evidence of much "smut" among it from the black blotches on our clothes. Barley ears with abortive grains are to be found in most fields, but we have seen none that is seriously so affected.

We saw in our journey several fields of Winter Oats being mown; in every case the straw was so green that it was with regret we saw a self-binder reaper at work upon this crop in one field. Green straw, and a vigorous weed growth among corn, call for caution in binding and stacking corn this season. Our own Winter Oats will not be put into sheaves at all. They are mown into light swaths, left so long enough for the exposed side to ripen, and are then turned over and left till the remainder of the straw is ripe and sufficiently matured for stacking. Spring Oats on many farms which have come under our notice are a light crop, owing, we believe, to poor culture. To have a full crop of White Canadian or Black Tartarian Oats land must be in a state of high fertility, and it will then yield at least twenty sacks an acre. Less than this cannot answer while foreign Oats are so cheap. Winter Oats will be followed closely by Rye, and on light ground by Barley and spring Wheat. We saw some Barley near Cambridge on August 9th quite ripe and ready for the reaper, while at heavy land farms on the same date the ears were quite green.

A close inspection of the crops on many farms has brought conviction that the condition of them generally is very much in accordance with that of the soil in which they are growing. As usual, bad farmers would have us suppose their inferior crops to be an outcome of the season, and that a late harvest must of necessity be a bad harvest. This is altogether wrong, for in this and in every year the crops of the really good farmer are excellent in a very high degree, while those of the bad or incompetent practitioner range downwards in the scale of inferiority very much in proportion to his practice. It is from the latter class that the outcry about weather and crops comes, and we cannot but receive any statement from them, however positive, with reserve. On the whole, then, with fair weather now we may reasonably hope that a bountiful harvest, though a late one, will crown our efforts with a fair measure of success, and that there will be some improvement, however slight, upon the results of last year.

WORK ON THE HOME FARM.

The haymaking was finished in real summer weather, and the last two stacks of hay are excellent both in colour and quality. Taken on the whole the hay made this season is sound, wholesome, and nutritious, and we require cattle spice or other nostrums to render it palatable. In this we are fortunate, as much hay has undoubtedly been spoilt on the low lands, and in several instances it has been carried off by floods.

The corn harvest has begun, and the work generally is heavier than it was last year from the greater bulk of straw, and also from much of the corn being lodged. The Barley will require especial care owing to an exceptionally strong growth of weeds, and of the plant of layers of Clover, Sainfoin, and mixed seeds wherever they have been sown among it. Oats, too, require much care, for the corn is ripening upon green straw, which requires full exposure and turning at least once after the mowing. Self-binder reapers will not be found so generally useful as they were last season, and the use of them will be restricted to crops sufficiently free from weeds, and with a clean erect growth of straw. As the season is undoubtedly a critical one it is highly important to secure enough labourers to ensure the work being done expeditiously while the weather holds fine, and not to depend overmuch upon implements.

Since the change to finer weather arrears of hoeing among root crops have been taken in hand, both to destroy weeds and to single late white Turnips. Most of such crops are highly satisfactory, and all green crops are remarkably abundant. Maize, though backward, is a full strong plant. Cabbages and Kale are exceptionally vigorous, and are quite free from any suspicion of club root. Tares have not only given a heavy crop, but from winter Tares we have a second growth which is being turned to good account for sheep folding.

Of white Mustard we have some useful fields, some of which have been ploughed in, and others folded with sheep before the ploughing. So far as is possible ploughing is being pushed forward, as with a late harvest we shall have to be on the alert to have the land ready for Wheat sowing in good time. On heavy land we like to sow as much Wheat as we can in September, in order to ensure a stout plant that is well established in the soil before winter sets in.

THE HARVEST.—Russia appears to be the only European country in which a good harvest is expected, though Roumania has reaped a fair one. France has a very defective Wheat crop, and is now in all the agonies of a wet harvest. In Spain and Italy the crops have proved much below average; in Austria-Hungary they are a great deal less prolific than they were last year; and they are below the mark in the west of Europe generally. The American Wheat crop is well known to be a poor one, though not quite as bad as it was at one time expected to be. Harvest is nearly finished in the United States. Estimates based upon some figures supplied by the Department of Agriculture in June, as interpreted by the declared condition of the crop in July, point to a total yield of winter and spring Wheat amounting to about 427,000,000 bushels, or 29,000,000 bushels less than last year's produce. Since July 1st prospects, it is reported, have remained about stationary, so that it is not likely that the out-turn will be in excess of that just stated. Canada, in spite of an extra crop in the North-West, will do little more than supply her own requirements, and may be left out of account in considering the Wheat supply of Europe. The "visible" and "invisible" stocks of Wheat in the United States on July 1st, according to the *Cincinnati Price Current*, amounted to 63,000,000 bushels, or 10,000,000 bushels less than the stocks held at the corresponding date of 1887; 18,000,000 less than those of July 1st, 1886; and still more below the quantity for any other year since 1882. Unless this small reserve is to be diminished, then, it appears that, even without allowing for the consumption of the increase in population during twelve months, and also without taking into account any possible difference in the stocks of flour, the United States will have a smaller surplus by 29,000,000 bushels than the 116,703,330 bushels of Wheat and flour in Wheat equivalents exported in the year ending June 30th, 1888

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. August.		9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass.	Rain.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	5	29.801	56.2	50.8	N.	57.2	67.8	53.8	118.7	49.8	0.010
Monday	6	30.154	57.8	51.7	N.	57.0	68.0	4.5	93.6	41.7	0.017
Tuesday	7	30.159	66.8	63.6	W.	56.7	78.9	55.2	120.6	53.6	—
Wednesday	8	30.153	66.6	61.8	N.W.	59.9	79.7	60.3	124.6	57.2	—
Thursday	9	30.25	74.1	67.9	S.	60.2	82.7	65.9	125.6	51.6	—
Friday	10	30.31	74.3	67.4	E.	61.4	81.6	61.8	125.3	5.4	—
Saturday	11	30.76	63.9	60.4	S.W.	62.7	68.6	56.5	85.0	43.3	—
		30.072	65.7	60.5		59.2	75.2	55.7	113.5	51.5	0.027

REMARKS.

5th.—Heavy rain in early morning, fine day, shower about 8 P.M.
6th.—Cloudy day, with occasional spots of rain, wet evening.
7th.—Bright and warm.
8th.—Bright and warm.
9th.—Hazy early, bright hot morning, cooler and frequently cloudy in afternoon.
10th.—Cloudy early, bright hot day.
11th.—Cloudy and cool.

A fine warm week. The maxima are about 4° above the average. This is only the second week in which, since February, the maxima have been at all above the average. It is many years since the daily maxima have been so uniformly and persistently low.—G. J. SYMONS.

SUBSOILS.

IMPROVING LAND.

SUBSOIL may be described as the layer of earth immediately below the ameliorated portion, the former not being usually interfered with in preparing the ground for crops with the plough or the spade. In spade husbandry the subsoil may be about 12 inches from the surface downwards, whilst in ordinary farm operations the surface is not stirred deeper than 6 inches. There is, therefore, a great difference in soils as they are operated on in gardening and farming; and there is a difference in subsoils, though some vary little in composition from the surface soil, yet there is generally a great distinction between them in cultural values. The surface or worked soil contains a very much larger proportion of organic matter and soluble food for plants, and though liable to impoverishment by the crops, is benefited by the roots and other parts of such plants as remain after the crop is taken, these decaying, and in combination with applied manures give the surface soil an immense advantage over the subsoil, as it can derive little or no increase of organic matter through the comparative inaccessibility of air and rain. It must not, however, be overlooked that the surface soil is altered in texture by the crops. It is made more open by the roots that traverse it, and its friableness is increased by the operation of tillage. This admits of the freer access of the great solvents, air and rain, insuring a more speedy decomposition of organic matter, or the formation of it, this decomposition causing some of the soluble matter to pass down to the subsoil, which, it is unnecessary to say, is a direct increase of the resources of the soil as it affects the crops. The compounds taken down remain in the subsoil in proportion to its retentive power. They exert influence, useful as food, or for food manufacture out of otherwise inert matter, or are injurious to plants from the lack of the necessary correctives essential to changing the compounds into plant food. Some soils may be almost sterile before they are exposed to air, or they may be of little value for useful crops until the deleterious substances in the subsoil have been changed by the application of some materials, as that of lime to peat or boggy soils, which are impregnated with the salts or oxides of iron. If the subsoil be sand or gravel, or otherwise of a loose nature, the soluble compounds brought into it by rain soon pass away, so that there is less addition of useful food, and it follows, less danger of the deleterious matter being retained. If, on the other hand, the subsoil is clay, it retains what is brought down by rain passing through the surface soil, which may in effect contribute to the soil's fertility, or prove deleterious through retaining the poisonous as well as the soluble compounds that are useful as food for plants. An efficient system of drainage, it is evident, must form the basis of all operations having for their object fitting the soil for a variety of crops, and for making the most of the cultural operations through the changes effected by the free access of air and rain, and to assist in the disintegration of stubborn material, and change the otherwise inert or injurious compounds by the application of corrective material into nutriment for crops.

Subsoil is apt to be overlooked in deciding on the fertility of soils, yet it exerts a commanding influence on the surface soil. When the subsoil is open and sandy it is poor, through its lacking the means of retention of the soluble compounds brought into it from the surface soil by rain, which drains away rapidly, and as evaporation from the surface soil is correspondingly free, the plants grown thereon suffer greatly in time of drought. It is evident that to materially improve such soil some substance must be employed that will render it more retentive alike of rain and of the manurial matter employed; the non-calcareous by a dressing of chalk or of clay marl, whichever may be most convenient, though the latter would perhaps be the most effective from its adding by the divisibility of its parts to the rooting area and the increased retention of the solvent compounds. It is well perhaps to notify that a siliceous marl is only valuable to a light soil in proportion to the amount of chalk present, and deleterious in relation to the percentage of silica or sand, on which account it is not nearly so beneficial for light soil as the clay marl having clay or alumina as a component part. To effect a permanent improvement, 100 cartloads per acre, mixed with the soil, but not so as to interfere with its tillage, is a proper quantity.

Some light soils have, beside a sandy or gravelly subsoil, an under stratum of clay, or conglomerated sediment of various earths largely impregnated with oxides of iron, which retains the water to a certain level, and from such Horsetails and Thistles spring strongly and in profusion. Such reservoirs of moisture are of no value, but the contrary, inasmuch as they contain substances poisonous to useful plants through stagnation. The water in such cases must be carried off by drains, so as to prevent its lodging within 3 feet of the surface; indeed all soils should be freed of water beyond their retentive power within 3 feet of the surface by an efficient system of drainage.

Where the subsoil is clay, more or less impervious to water, the rain passing through the surface soil is retained, or otherwise, according to the degree of porosity, and collects in the low places or hollows, stagnation ensuing, forming organic acids in consequence of the absence of air acting on the decomposing remains of previous crops or the remnants of the manures not appropriated by prior crops. The surface soil in consequence is rendered cold, sodden, and sour. Nothing but an efficient system of drainage can render such land for profitable cultivation, inasmuch as other operations are frustrated until the land is freed of the stagnant water and poisonous compounds. The drainage alone will change the nature of the subsoil, as the water dislodged by the drains will be followed by air, and the organic elements will form nitric acid in addition to that brought into the soil by rain, whereby the poisonous compounds will be neutralised and nitrogenised, and food stored in the soil for the support of useful crops.

Clay subsoils should be well broken up. For gardens, whether flower, vegetable, or fruit, the land should be trenched, not turning the top ameliorated soil under one or two spits of stubborn material, but keeping all the workable portion uppermost, the stiff material being kept under, yet disturbed in order to form passages for the free percolation of water through it, and to insure cavities for the storing of air, moisture, and warmth. Although the ameliorated soil should be kept at the top, some of the under layer may be brought to the surface, as such contains substances required by plants that have passed into the subsoil, leaving the surface more or less exhausted. It is a direct means of affording new soil, which, exposed to the atmosphere, pierced by frost, or baked by sun, becomes pulverised, mixing readily with the bulk, enhancing its fertility. There is the still further advantage of increased depth for roots, whilst the blending of the manures with the new soil improves the whole considerably, a larger food being provided and furnished with sustenance for crops.

Perhaps the greatest effect next to breaking up a clay soil is to burn some of the stubborn material; this alters its texture, rendering it more open, consequently more permeable to air, water, and the roots of plants. Its affinity for ammonia is also increased, and a much greater proportion of soluble alkalies, especially of potash and soda, provided; but that depends in a great measure on the degree of burning, for if hard burned the clay will be of the nature of bricks, and its alkaline constituents are then less soluble than of

the clay in its original state. The most that should be sought by burning is that the clay may readily crumble. In that state 100 cartloads per acre is a fair dressing, applying it to the surface, and it will render a good account of the ammonia within reach, absorbing it from the atmosphere and from manures or by whatever means supplied. In the case of very stubborn clays it is advantageous to mix some of the harder burned particles with the stubborn material at the bottom of the trenches, by which means the permeability of the soil to air, rain and roots is made more durable, acting alike as a storehouse of moisture and food, from which the crops can draw supplies in times of drought, the roots being attracted downwards by the moisture they inadequately receive at the surface, and as they must in due course decay they tend to open the soil to a greater depth and supply organic matter for its enrichment. In that way soils which have only a thin layer of ameliorated soil can, no matter how stubborn the subsoil, be deepened, and in the course of a few years so much so that the ground can be trenched two or three spits deep, blending the whole mass with very great benefit to the crops. What most land needs is new soil brought to the surface to be ameliorated and enriched by the action of light, air, and rain, pulverised and made workable by frost or sun, in which state the soil derives the greatest benefit from the solid manures applied, and the whole staple is permanently improved.—G. Abbey.

GRAPES SCALDING.

When theories become firmly established it is very difficult to eradicate them. If we could obliterate the notion that scalding is constitutional then I am convinced we should hear considerably less of this evil than we are in the habit of doing. My object is to show that scalding is not a defect in the constitution of any variety of Grapes, and one is no more liable to be attacked than another; but that it is due to the system of culture pursued, and can by care and forethought be prevented or mitigated. If we were to conclude that scalding is constitutional with Lady Downe's we should be compelled to place other kinds in the same category. It is no more difficult to scald the berries of Black Hamburgh and Madresfield Court than those of Lady Downe's, a variety perhaps more subject to this evil than others. There is no doubt whatever that the constitutional theory has come into existence because scalding has been more prevalent in late than early and second early houses, but this is explainable.

It may be well perhaps to give the reason why late Grapes suffer more from this evil than those forced to ripen early in the season. It is because the sun, when the former are passing through the stoning period, has considerably more power over a longer period of the day, and there is generally much greater extremes between the day and night temperature than is the case when Black Hamburgh and others are passing the most critical stage of their growth several weeks sooner—in spring instead of summer.

It must not be concluded that the sun alone is to be blamed in the matter. My proposition is that it is the source from which the mischief springs when cultural requirements are defective. Irregularity in the temperature, such as extremes between the day and night, or even extremes during the day, will play a very large part in bringing the evil in question into existence, or aggravate it when it exists. Scalding is liable to take place just as the stones are becoming hard—in a word, when they are in the last stage of perfecting themselves. Over-forcing, whether due to an increased temperature by sun heat or the anxiety of the cultivator to push the crop forward when Nature requires to move slowly, will certainly end in scalding, to a greater or less extent, according to the amount of forcing to which the Vines may be subjected. The hottest sun during the day will do no harm provided liberal ventilation is given, and I would much sooner have a continuance of hot bright weather to deal with during the stoning period than such weather as we have had this year.

I have suggested that scalding is brought about by the cultivator, and hence may be to a large degree prevented. In nearly every case, in the majority of seasons, this evil is due to defective ventilation early in the morning or after the routine closing time in the afternoon. Scalding nearly always occurs where the morning or afternoon sun strikes directly upon the house when it is closed. Suppose the east end of a house has one fixed light, or the top ventilators do not open to the end, I venture to assert that unless the necessary precautions are taken the berries will scald badly whether the Grapes are Black Hamburghs or Lady Downe's. Even when the ventilators open to the end of the house the bunches exposed to the sun are not generally safe from this evil. The same will take place at the west end of the structure when it is exposed to the sun in a like manner. It is possible that the berries will scald in these two places when there will not be the slightest trace in any other portion of the structure. The midday sun does no harm provided the house is freely ventilated, but subject the Grapes at this critical period to the same conditions as the east and west portions of the structure, and scalding will be the result. If I may use a homely illustration, the Grapes in the east and west portions of the house are practically in a stew-pan, and when the temperature of the whole house is allowed to run up to 80° or 90° before it is ventilated, the Grapes throughout the greater portion of the structure are subjected to the same trying ordeal. Those nearer the base have the best chance, and often escape without serious injury, while those in the highest position are certain to fare worst. Who can expect Grapes to come out of a stew pan in the same condition as they were before they were placed in? It is impossible, and in like manner those who neglect to ventilate until the moisture in the structure become overheated must expect scalding, while those who allow the escape of moisture early in the morning or leave air on those critical positions all night need not fear being troubled with the evil I am writing about.

Air at the base only is not sufficient to guard against this evil. A "chink," however small, should be on the top as well—that is, in the east corner, while the light, or ventilator of the west end, should not be closed before the sun is sufficiently low to be harmless. If this is done the Grapes in these two positions will be safe from scalding, as will also the remaining portion, if air is admitted at the top at 6 A.M., instead of one, two, or three hours later, as the case may be. Even the admission of air is not always ample, for I have known the berries scald in the bunches exposed to either the morning or afternoon sun through the ends of the house. These can be protected by shading them with whitewash, which can be removed after the Grapes are fairly well coloured, or if left on until they are ripe it will do no harm. There are plenty of old houses still in existence where the top portion of the lights slide down, and in many instances I have noticed a light at each end are fixtures. The admission of air at the light adjoining the fixed one is not ample to protect the Grapes under the fixed one. I have proved this to be the case, but if the exact position where the sun strikes early and late is lightly whitewashed not a berry will be lost.

This has been a trying and peculiar season, and has considerably taxed the experienced grower. It has been most difficult to know how to ventilate to prevent great extremes in temperature even in the short space of an hour. Grapes during the day have not been subjected to such irregularity from natural causes perhaps for very many years, and this is the reason that scalding is so prevalent. When Grapes reach the stoning period the safe course is not to hurry them, but give them time and strive to maintain a regular temperature. This is best accomplished by slightly raising the night temperature and ventilating on the most liberal principles during the day, so as to bring about a nearer approach to uniformity between day and night. When the evil makes its appearance the only chance of mitigating it is to be careful that the conditions that brought it about are not repeated. The night temperature should be raised to 70° or even 75°, according to the weather, and the house ventilated early and late, while during the day it should be ventilated on the same principle as a greenhouse.

Those who have scalded Grapes this season are largely excusable, but in good and average seasons there is but little excuse for those who fail from this cause, because it is mainly due to negligence in ventilating the structures in which they are grown.—Wm. Bardney.

RUBBISH HEAPS.

An "old hand" of the gardening fraternity once said, "Show me the rubbish yard and stokehole of any gardener, and I'll tell you within a little what sort of a gardener he really is;" yet however good his judgment may be where such conveniences exist, he would have to found his opinion upon some other basis in endeavouring to sum up the abilities of the man who has "no rubbish heap." Most gardeners are in a favour of a rubbish heap, or a fire, as the refuse from the latter is of considerable value from a manurial point of view, while in the case of heavy holding soils the free use of such refuse is of the greatest possible help in bringing the soil into proper working order. Some time since I observed an instance of the "no rubbish heap" principle, and it may be worth recording. The accumulation of rubbish in large and small gardens goes on at an alarming rate, and, if not methodically dealt with, soon becomes an offensive pile. It was with a view to avoiding the disastrous consequences arising out of the latter that the rubbish

heap in the instance before us was abolished. The garden where this is carried into effect is of considerable size, and forms part of the grounds of the Metropolitan and City Police Orphanage at Twickenham. Consequent upon the number of orphans who are cared for at this excellent institution, precautionary measures are freely employed to prevent the outbreak of disease. It is with this object in view that Mr. Gardiner, the superintendent, has studiously avoided a rubbish heap owing to the impure vapours which arise from such during fermentation and decomposition. A deep trench is formed across one of the quarters in the kitchen garden, and the garden refuse as made is deposited in it and covered with a sprinkling of soil. When the trench is sufficiently full it is covered in, leaving another by its side; this in time is served likewise, and so the operation continues till the whole quarter has been traversed. By this process the soil receives a good dressing, and is thoroughly trenched into the bargain, the ground being cleared and cropped as the work proceeds, so that at no time will there be any great amount of land unoccupied. The plan answers admirably, and excellent crops are the result. Nothing is simpler or more effectual, and may be adopted in most gardens, thereby dispensing with the unsightliness of the rubbish heap, which in some cases amounts almost to a nuisance.—J. H. E.

A CHAPTER ON FAILURES.

I AM glad to see that much of my advice is verified by practical men, and maybe some of your readers may be inclined to think I have no failures; but I have, and, further, I never knew a gardener who had not. I have been under a few good ones. I have seen the work of others in many parts of the country, and in all cases I found failures; some, it could be seen, would not own to them, while others, and these generally the best gardeners, made no secret of them. Indeed, the plants which come under the care of a gardener are so numerous and varied in their requirements that no one who considers the matter fully need be surprised that they should have failures, and the wonder is they have not more. But probably the reason some are afraid to own to their failures is because their employers do not expect them and make a disagreeable fuss when they occur. For instance, I have known some employers visit nurseries and buy the most tender and rare kinds of plants when they had no proper accommodation at home for them, and they could not possibly receive the same treatment as they were receiving in the nursery, the result being that they died or remained sickly; but although this might be regarded as a failure by some it is unreasonable to blame anyone for it, more particularly the gardener, who is unfortunately connected with the case. I have also known garden owners so much charmed with Muscat Grapes that they did not feel satisfied until they had planted some, but as their houses were only fit to mature cool-growing Grapes the Muscats were not a success, and culture was thought to be deficient. I am, fortunately, not referring to myself in these cases, as I have a reasonable employer, but I could tell of those to whom the remarks apply.

Some years ago I had a capital stock of Calanthes. They were potted in the spring as usual, but they were overwatered before they had formed sufficient roots, became sickly, and it was two years before they recovered. Orchids bring many failures, and this, I believe, is why they remain so expensive and the demand for importations never lessens. I have killed many. I once had some Masdevallias which I hoped to improve by placing them in a little extra heat, but it did not agree with them. Some of them died, and none was improved. Early Carnations are wanted with us. One autumn we lifted a number of layers from the open borders and planted them in the bed of a conservatory. They existed and grew a little, but they were a long way from the glass, and in a good deal of moisture, and although they produced flowers some weeks before they would have bloomed in the open, the blossoms were small, and the plan was not a success. Maréchal Niel Roses are favourites here. We have tried them in many corners under glass to obtain them early. Two or three plants that were placed in the bed of a Cucumber pit with bottom heat and a close atmosphere to urge them on made huge growths, but never produced flowers worth looking at. Several Peach trees were planted in the open in deep heavy soil. They tried to grow, but did not, and after two years they were dug up, given to a cottager, planted in very shallow soil above ample drainage, and at the present time they are pictures.

Mealy bug is an enemy we have had to contend with. Through growing all sorts of plants in a vinery it attacked the Grapes. It was eradicated, but not without failure. A well-recommended insecticide was put on so strongly and freely that it burned the skin of some of the young green berries, but the bug was hardly injured. A year or two ago a new insecticide was received. I had no experience of it, but I trusted to the advice of others, syringed a few Peach trees with it according to directions, and in less than a week half the foliage had fallen.

Sensational crops are always seductive; more than once I have allowed double the number of bunches to remain on the Vines than ought to have been left, and the result almost invariably was small berries and poor colour. One year I thought to still further improve our good Celery by earthing it up with finely sifted ashes. The sun in July and August made the ashes so hot that they scorched the leaves and stems and the plan was a complete failure. Extra fine Vegetable Marrows have been expected more than once from plants grown in little else than manure, and most luxuriant growth with a few badly formed fruits followed. We have sown early wrinkled Peas in trenches early in spring, when three parts of the seed perished by cold and wet, and little failures of this kind have occurred with other vegetable crops.

Conditions of weather and other circumstances have so much influence over all the gardeners' live stock that I hold it is impossible to go on without failures; and although I am strictly in favour of trying the utmost to avoid them all, should overlook them so long as they are not too numerous and severe. In gardens where failures are the rule the cause is obvious, but where they are the exception and occur chiefly by trying experiments to improve the condition of things I would exempt all connected with them from blame.—K. G.

CABBAGES—A CRITIQUE.

I THOUGHT at the time of reading the bold assertion of "A Kitchen Gardener," on page 90, that it would "never answer" to sow Cabbage seed early in July, someone would show he was in error. Had your correspondent been content to say early July sowings had not answered with him he would have been on safe ground. He appears to have ascertained "without doubt" that the last week in July and the first week in August is the best period for sowing. That may be so in his case and many others, but it is not the best for all varieties, districts, and purposes. I have seen Ellam's Early command higher prices in the market, the plants raised from seed sown early in July, than I ever expect to see any larger and later sorts realise when sown as advised by your correspondent; and if that is not a test of merit both as regards a variety and time of raising I do not know what is. The value of Cabbages depends on their earliness, not only for market but equally so in private gardens, and in the latter small Cabbages are usually preferred; moreover, as two of these can be grown in the space required by one of their larger congeners, the smaller are the more profitable. Sow the true Ellam's about the 10th of July very thinly, so that the plants do not touch each other till they are large enough for planting, and not one out of a hundred will bolt; and I shall be surprised if any of the large varieties sown with Ellam's now, at this late period, will equal it in the spring.

Although "A Kitchen Gardener" writes with much confidence, his communications suggest that he has still something to learn, even on Cabbages and their culture. He has nothing, however, to learn in the art of laudation on the one hand or condemnation on the other, according as a variety may please him or the reverse. There is no shading in his word-painting, and black or white appear to be his favourite colours, first one and then the other predominating, as he is disposed to "lay it on." He condemns the Early York Cabbage in his bold way, for he says "it will never be a favourite again." "Never," is rather an awkward word to use in that sense, as it has a bearing, not on illimitable time only, but on numberless persons, for it means, if it means anything, that the variety can never become a favourite with anyone. I am on quite safe ground in saying he is wrong there, for it is a favourite of mine, because it has served me and others well. It is condemned on page 90 because it "bolts." May I venture to submit that the variety is not so much at fault as its judge? "A Kitchen Gardener" sows his Early York at the wrong time, and if he will sow at the right period he will have a different result.

I can scarcely understand a person learned in the art of Cabbage growing by years of experience sowing Early York in the autumn. It should be sown in the spring for use in the autumn, not sown in the autumn for use in the spring. I do not hesitate saying that until a grower has raised plants of it in April and May for use in the autumn is in a position to give a true verdict on the variety. Like your correspondent I have even grown from "twelve to eighteen" varieties of Cabbages, and probably more than twice the number, and I have this to say about Early York, that will "never" be in favour again, that I know not one out of all the twelve that excels it for late autumn use, not one that has given more satisfaction to, well, not bad judges of what is good. Have it in at the right time and the best condition, and it surpasses Colewort, renders Savoys coarse by comparison, and is preferred even to

Brussels Sprouts by at least half the persons who have their share of both. So much for the sweeping "never," and I suspect the condemned culprit will be grown more than ever next year.—A Yorkshire Cabbage Grower.



BLUE DISAS.

Blue Disas have been mentioned in the horticultural press more frequently than they have been seen flowering in this country, but one of them, Disa lacera, is now flowering in Mr. A. H. Smee's collection at Hackbridge Grange. It is one of Mr. O'Brien's introductions, and it is on his authority that Mr. Smee's gardener, Mr. G. W. Cummins, supposes it has not flowered in England before. The plant is in a 3-inch pot, throwing up a straight thin wiry-looking stem about 18 inches high from the tuber, the grass-like leaves withering before the spike appeared. The flowers, of which there are four or five, are about an inch across, and of clear cœrulean blue, with a small lip, fringed, and much darker in colour. It is an attractive novelty. Several new Disas are grown at Hackbridge, and they are found to succeed best on latticework supported a few inches above a stream of water overhung with trees in the garden. The pots and roots are there constantly damp and cool. Masdevallias and several Odontoglossums appear to enjoy the same treatment, but thrips do not, a consignment of plants much infested with these insects being now quite clean and rooting freely. Several new Disas from very small tubers are being established in a cold frame in a shaded position, the pots stood on others in large saucers of water. These plants do not thrive in any of the houses, because they are not sufficiently cool at the roots and the air surrounding the pots too dry.

THE LYCASTE DISEASE.

Many growers of Lycastes, notably of L. Skinneri, have been troubled through the pseudo-bulbs of the plants gradually decaying, the disease appearing in the form of small dark specks, which enlarge till the entire tissue is destroyed. This having occurred in the collection above noted, an analytical chemist prepared a transparent liquid, resembling water in appearance, but in smell most offensive, which Mr. Cummins was desired to try on an infected plant. One of L. Skinneri alba, thought to be incurable, was chosen, and the liquid applied to it with a camel-hair brush. The malady was at once checked, and now a pseudo-bulb perfectly clean and healthy has sprung from those unmistakeably diseased, and the bad and good in the same pot cannot be mistaken. It is a pity there is no Tomato disease at Hackbridge to which the innocent-looking liquid could be applied, or there might be a chance of making the promised fortune. Perhaps Mr. Iggulden might like to try it, since he tells us that Dr. Masters' proposed remedy has failed; not that our Tomato authority wants to make a fortune—that would be no novelty to him—and he would only be too glad to make a remedy for the Tomato disease known to the world.

THE COMMERCIAL REALISATION OF FRUIT.

(*Continued from page 145.*)

A marked feature of the value of fruit crops is largely lost sight of by all home growers, and that is the deterioration that takes place in the flavour of fruits owing to the delay that takes place, and the treatment they are subjected to in their transit to market. The quality of the crops that occupies an inferior position, owing to this circumstance, is something incredible. Most of this, if properly dealt with in the vicinity when gathered, would retain its freshness and flavour, and consequently its value. These and many other advantages can only be ensured by commercial co-operation, which may be acquired if the fruit farmers of a district will combine to place their crops at their own general disposition for joint realisation in the most suitable manner that local circumstances pointed out. If this were done to a sufficient extent I know that efficient commercial assistance could be secured for all purposes—viz.,

1st, To supply all the facilities necessary for the purpose of dealing with the crops in the most advantageous manner.

2nd, To organise an outlet for the fruit in every possible direction, and arrange for its direct despatch to retailers from the farms or centres of collection, so that expenses may be saved and loss of time avoided.

3rd, To form and register local societies for the producers of each parish or district, and to establish a central society in London, in the management of which they will take part and control so far as the conduct of their own business operations requires.

4th, Arrange for the provision of the necessary funds for the local societies to make payments on account to the growers upon the delivery of their fruits, pending realisation.

5th, Provide the plant, machinery, and utensils of trade, necessary and requisite for all the operations, to effectively and profitably prepare the crops of fruit for realisation as may be determined upon.

6th, Select the skilled and practical labour necessary to the various operations, and arrange for the working and supervision of the business details.

7th, Establish and provide the London office with its furniture, fittings, and clerical staff, &c., and organise the direct sale of fresh and preserved fruits to retail traders and shippers.

8th, Provide the requisite advertisements, printing, books, stationery, postages, telegrams, travelling expenses, and other disbursements of and incidental to the business operations.

The commercial arrangements referred to as necessary for the effective preparation for sale and the utilisation of the fruits, their sale to the trade, for the public, and the organisation of a systematic system of speedy distribution, all of which measures are essential to ensure successful results, among other things include—

(A) The sorting, classing, and packing of fresh fruits into small boxes for effective transport, and properly marked and branded for ready sale.

(B) The provision of cold stores and cold storage chambers in vessels and railway carriages, that fruits, immediately they are gathered, may be cared for and maintained in a fresh condition by being kept in a cool temperature until they reach the retailer.

(C) The arrangement of details for the shipment of fruits to the Continent, India, and the Colonies.

(D) The formation of the establishment for the evaporation or drying of fruits, and the creation of a demand for them by the public.

(E) The arrangements for the preservation of fruits by their manufacture with sugar, while fresh, by crystallising, candying, and other processes for the preparation of dessert fruits and sweetmeats.

(F) To provide for the preservation of fruits by bottling and canning in various forms for dessert and cooking purposes.

(G) The formation of the factory for the pulping of fruits, and their preparation and ultimate sale to manufacturers for conversion into jams, jellies, &c.

(H) The arrangement for the manufacture of jams, jellies, fruit butters, marmalade, and other preparation, and the arrangement for their sale in the home and colonial markets.

(I) The establishment of a system of standard qualities and qualifications, coupled with registered trade marks and brands, that home-grown produce and its quantities may be prominently known in the markets, to the trade, and by the public.

The above conditions are absolutely requisite and necessary to enable fruits to be beneficially realised, they cannot be effectively carried out by any one grower, or even by a body of growers, unless they are possessed of a larger amount of commercial knowledge than is usually found among farmers who, as a body, give all their time and attention to totally different matters.

The sound, practical, and legitimate course for producers to pursue is for all within a reasonable district to co-operate with each other for the realisation of their crops in connection with one central organisation, which would undertake the whole of the commercial duties pointed out, and take upon themselves all the financial responsibilities and risks, and receive as their remuneration and repayment a portion of the amounts received for the produce. From this combination of agricultural, industrial, and commercial experience the highest results might be looked for, inasmuch as the members of the local organisation would manage the preparation of their own produce in a definite and systematic manner, of which they would be from time to time informed and advised, by which they would control their expenditure, and keep it at the lowest limit. While they would have the benefit of an organisation for the sale of their produce, whose importance and effectiveness would grow with the increase of the local societies—and who instead of deducting as at present certain fixed sums, irrespective of the amount realised, which at present sometimes absorbs all, and very frequently nearly all, the proceeds of the amounts received for the fruits, while the organisation would be content to receive a portion—say one-fourth—of the amount received for the fruits as their payment and recompense, thus leaving with the growers at all times a very large proportion of the amount realised.

BATTERSEA PARK.

When this and other of the London parks passed to the control of the Metropolitan Board of Works some fears were entertained that the change would not be to their advantage. It is gratifying to perceive that not only is the popular park under notice well maintained, but great improvements are in progress, and others in contemplation. The whole of the glass structures provided for raising and preserving plants are undergoing thorough renovation, this involving a cost of upwards of £3000. Another great work to be undertaken is the cleansing of the lakes, and a deep and large culvert is being made to empty them into the Thames at low water, and fill them at high tide—an important provision and distinct permanent improvement. The houses have been allowed to fall into a most dilapidated state. They do not appear to have been painted or repaired for years. The late Superintendent was evidently the victim of State parsimony to an extent that the public could

scarcely anticipate in respect to the structures, and he must consequently have worked under great disadvantages; indeed, it seems little short of miraculous that so many plants should have been raised and prepared in such tumbledown buildings. They were a disgrace to the nation, and the present authorities have substantial cause for complaint in having to take them over in such a deplorable condition. So much has to be done that it seems difficult to see how the work can be completed for the reception of plants in the autumn, and it will be fortunate if grave inconveniences are averted, and in that respect the outlook is not cheering.

Battersea Park, indeed all the parks and open spaces south of the Thames, are now in charge of Mr. F. 1. Coppin as District Superintendent, Mr. Cochrane of Finsbury Park being similarly responsible for parks and gardens on the north side of the river, including those on the Thames Embankment, resident foremen working under the respective superintendents, who, it will be perceived, occupy important and responsible positions. Mr. Coppin has upwards of 200 men under his charge, and only an active, quick-sighted, clear-headed business man could keep them and the work well in hand over such a large area. He was formerly the manager of Southwark Park, developing qualities that fitted him for his present position. Many changes have been made by the Board in the workmen, but the experienced foreman, Mr. J. Hart, remains at Battersea, and Mr. Coppin will find in him a valuable coadjutor. He has been employed in the Park nearly twenty years, is acquainted with every nook, plant, and tree in it, and apt in carrying out details of work.

The superintendents and managers of the parks are fully impressed with the good influence they exert on the minds of visitors, and do their utmost to render them agreeable to all classes. They strive to make the flower gardening worthy the inspection of persons of wealth and taste, and like to see the workers enjoy themselves in the open spaces, also take interest in the cultivation and tasteful arrangement of plants. As an example of the popularity of the London parks, the visitors to sub-tropical garden in the one under notice were counted on three consecutive Sunday evenings two or three years ago, the numbers being roundly 67,000, 68,000, and 71,000. This represents a detachment only of the London public, and all the other parks would have their contingents, some more and some less, at the same time. What would become of the people of London if they had not such pleasant health-giving resorts is not a pleasant thought to dwell on; and no money is better spent than that which is judiciously applied to the maintenance of the London parks and gardens, and it is hoped the time will never come when they will be neglected.

As to the appearance of Battersea Park this year, it has been, like other parks and gardens, unusually green, but has brightened up astonishingly during the past week. The Zonal Pelargoniums are overgrown, and cannot be dazzling. An old soft scarlet variety, Montrouge, is one of the most satisfactory. Begonias quite surpass them in effect, and of these there are good beds. It is a pity there were not many more Violas, for some long lines are masses of flowers, while large beds of them intermixed with the silver variegated Pelargonium Manglesi are amongst the most pleasing of all. It is surprising to see how good and well filled the beds of Coleus and Amaranthus melancholicus ruber are margined with white or yellow edgings. Iresines have been starved, and Petunias nearly washed out. Gazanias have answered well, and groups of Fuchsias are attractive. Lobelias have passed through the rainy ordeal almost better than could have been expected. Sub-tropical plants are late, by far the finest, if they may be so described, being a colony of Brugmansias. Yuccas are throwing up their stately spikes, one fine old specimen having five of them laden with ivory white flowers. The Palm and Fern dell and vista are most tastefully furnished, visitors being compelled to linger over the groups of healthy and elegant plants.

Carpet beds are well filled, Alternantheras assuming the rich glow that constitutes their charm. There is much less of Golden Feather than usual, the best yellow cushion plant in the panels being the Golden Spergula, while the Golden Chickweed is one of the worst. It is neither particularly good during a wet season or a dry one. It is unreliable, as is Sedum aere elegans, S. glaucum being far more constant and pleasing. The mixed beds are attractive, the large scarlet blooms of Hibiscus Cooperi in one of them causing many an onlooker to wonder what it can be; and for some time the most effective of the wilderness plants has been the double-flowered Bramble. Funkias have grown well and flowered freely, the wet season having evidently suited them. The diversified character of the park renders it enjoyable, and with a bright autumn it will remain attractive for a considerable time.

A great work requiring to be done is the regulation and thinning of trees and shrubs. They are fast growing into a thicket in many places, spoiling each other, and must get worse year by year if relief is not afforded. Yet it is necessary to proceed cautiously in the work in public parks in which so many inexperienced persons are interested, for it is pretty well understood that those who know the least make the most noise in fault-finding. Of this no persons are more fully aware than the managers of the enclosures, hence they strive to effect improvements gradually—it may be too cautiously in the interest of the trees—without provoking opposition.

ABUTILON VITIFOLIUM.

LAST year a correspondent in Cornwall sent us a note upon this beautiful Abutilon, in which he remarked that he had "a specimen 14 feet high and 32 feet in circumference at 6 feet from the ground, growing out of doors in a position sheltered from the north-east and west, where it flowered most abundantly every year." Very rarely are such examples seen out of doors, and it is only in favoured climates like the west of England or some districts in Ireland where these results could be expected. In most cases where it is found in gardens it is an inmate of the greenhouse, and very seldom can an adequate idea be then formed of the beauty of the shrub when fully developed. The flowers are large, of a delicate purplish or bluish mauve, not unlike the stately Meconopsis Wallichi in tint and form. They are produced in great abundance, and in contrast with the large dark green lobed leaves they have a fine appearance. A small spray is represented in fig. 18, but our artist has not caught the characters of the plant with his usual facility, as his specimen suffered in transit. Messrs. Kelway & Son,



FIG. 18.—ABUTILON VITIFOLIUM.

Langport, recently showed some specimens at one of the Royal Horticultural Society's meetings, when a first-class certificate was awarded for it as a half-hardy shrub.

DEGENERATION OF FRUIT AND VEGETABLES.

[A paper read before the Massachusetts Horticultural Society by Mr. O. B. Hadwen Worcester, U.S.A.]

(*Continued from page 95.*)

CONTINUING the discussion on this subject, Mr. William H. Hills of Plaistow, N.H., said that the topic was exceedingly interesting. He had made many observations in regard to it. Some think that the Rose Potato has degenerated, but we get them from Aroostook county, Maine, as fine as ever. When it was introduced he bought 2 lbs., and from that quantity he raised 240 lbs. He cultivated them like others, with a light dressing of manure over the surface, except that for the Rose he added a handful of superphosphate in each hill, and he

thought he could get as good results to-day. Sports are difficult to account for; on the May Duke Cherry trees there are every year branches where the fruit is from ten to fourteen days later than on the rest of the tree. There are certain conditions that we cannot understand. Last year he felt some alarm lest the Baldwin Apple was degenerating; his were small, but he found they were as large as anyone's. His early Apples were as large as ever, and his Russets never were finer. Something that we could not perceive had affected the Baldwins. It frequently happens that something which we cannot account for injures a crop.

Disease is distinct from degeneration. The Flemish Beauty Pear cracks; is this degeneration or disease? He notices the cracking of Apples more every year; the wound seems to heal inside and they seem to recover, but the fruit is still worthless; he thought this was disease, but could not tell what produced it. The fruit of the Baldwin Apple trees that were on his land when he bought it is different from that produced by the trees he has planted. There is no fixed type of this Apple, but in propagating he has always taken his grafts from trees bearing yellow fleshed fruit. A Grape Vine climbed into one of his best Baldwin Apple trees and ruined the fruit by causing it to mildew, but he has cut away the Vine and expects the fruit to recuperate. The modes of cultivation and peculiarities of the seasons are continually affecting fruit. Of sixty or seventy varieties of small fruits described a few years ago only four are in cultivation now.

Mr. E. W. Wood said that the question of degeneration had been much discussed, but no one could deny the fact, whether he attributed it to disease or other causes. He thought the essayist's comparison of vegetable with animal life might have been carried further. Man adapts himself to changes of climate by changes of clothing, and if we could do the same by trees we might be sure of good crops everywhere and in every season. Cultivation under glass effects this result, and hence Peaches in houses retain their health and produce regular crops. He did not agree with Mr. Hovey in regard to the Peach, but thought we cannot cultivate it as formerly. His recollection is that for a series of twenty years the crops were as regular as those of Pears are now, or those of Apples every two years, but if we attempt to cultivate the same varieties to-day we find a marked difference. He felt sure that plants do suffer from continued propagation by grafts or cuttings; he has grown remarkably strong Verbena plants from seed, but they soon ran out when propagated by cuttings. The Hovey Strawberry was perhaps more generally grown in New England than any other variety thirty or forty years ago, and there is no better kind now if we could grow it, but we cannot. Mr. Hovey's own specimens are not up to the standard of twenty-five years ago. In later years the Wilson has been more generally grown than any other kind, but it is now being discarded. Mr. Hovey said that he had seen Crawford Peaches sold for a dollar and a half per dozen, and he had seen a basketful sold for the same money. In 1807 Judge Peters said he had an orchard of two hundred Peach trees, and he complained that they were subject to disease and decay; and that for forty years they had been short-lived. This was near Philadelphia. Further south and in the western country and in some parts of New Jersey they were durable and productive, as they had formerly been with him. The subject before the meeting is not degeneration in Massachusetts, but everywhere, and it should be remembered that this is not the native climate of the Peach. The varieties are as perfect as ever. Dr. Van Mons's theory of producing improved varieties of fruit was by beginning with the wild species and sowing the seed through successive generations; but anyone would be called crazy now who should begin with the wild Fragaria virginiana to improve the Strawberry. He asserted that after several generations as good Apples could be got from seed as by grafting; but the Seckel, Sheldon, Fulton, and all other fine native Pears have come from cultivated varieties. There may be degeneration of culture, and we should be very cautious in attributing its effects to the degeneration of varieties.

Mr. Hadwen said that the fact of degeneration is not changed because we can point to some of its causes; but what has become of the old varieties? We cannot tell how long varieties can be made to exist; we may graft on vigorous stocks, but even then the period of existence of varieties is unknown. Mr. W. C. Strong objected to the term "degeneration;" he would say "liability to disease;" the instances quoted seem to militate against the use of the former word. The Flemish Beauty Pear has not degenerated. In some sections as fine specimens of this variety are still produced as were ever seen. So also in some sections of the country the Peach is as vigorous as ever; so is the Keens' Seedling Strawberry in England. Trees are sometimes invigorated by grafting on stronger stocks; the Magnolia is an instance. The question is whether the tree has become more exposed to disease than it once was. The cracking of the White Doyenné Pear may be caused by the soil having become exhausted of some element or elements necessary for its perfection.

Mrs. H. L. T. Wolcott asked, Could not the same Power which has limited the life of man to threescore years and ten have limited the life of trees also? Fruits and flowers certainly have gone out of date. There may be a consciousness of old age on their part.

Mr. Hovey said that plants were endowed with the power of perpetuation by grafting, which had not been given to animals. The Camellia was introduced two hundred years ago, and the Old White Camellia is the same as ever. Varieties do continue; the Windsor Pear is still good in England, though nearly two hundred years old, and there is a tree of the old Summer Bon Chrêtien at Mount Auburn as good as ever.

Mr. George Hill said that he had cultivated hundreds of varieties of Strawberries, and they have always degenerated and gone by, until now he cultivates only one variety, the Sharpless. Tomatoes also have run out; the plants would blast. As good plants as he could raise of the Boston Market Tomato have blasted; the newer varieties are less subject to this disease. Hybrid vegetables will degenerate unless they are carefully cultivated, and the seed is carefully selected; and this tendency seems to be much stronger than the tendency to improve. Old seed is better than new which has been allowed to run back.

Mr. Strong thought the deterioration of vegetables propagated by seed might be due to close fertilisation. What Mr. Hill had said about the Boston Market Tomato suggested this point. Darwin's view was that cross-fertilisation always gave the strongest plants. The effects of this method of propagation should not be confounded with those of grafting and budding.

Mr. Hills said that many of our improved varieties are more tender than the old ones, but the old varieties, once so highly prized, would not taste so good now as they did when we had no better. The further we get from a state of nature the tenderer they seem to become. We have a cultivated class of children as compared with those in the alleys of our large cities; are the former degenerated? It is the same with cows; the improved breeds are more tender, but they are not running out. Grafting on seedling stocks is surely changing varieties, though not perceptibly in one year.



ROSE SPORTS.

THE announcement by Messrs. Keynes, Williams & Co. (p. 119) of a dark sport of Marie Finger Rose is interesting, as sports, to the best of my recollection, have generally a tendency to come lighter than the original. A Marie Finger of the colour of Duc de Rohan might well be useful, if distinct from Comtesse d'Oxford; but we have now some close gradations of colour in this class; and it would be difficult to get in a new shade between Pride of Waltham, Marie Finger, and Marguerite de Roman.

A general discussion on the subject of sports would certainly be interesting, and might possibly become valuable. We are not content nowadays to let Nature keep any secrets which we can worm out of her. Nothing would be so likely to solve the mystery of the cause of sports as contributions from the experiences of a large number of observers; and if we could only cause or influence sports, we might perhaps be able to make a good many improvements. But, as matters stand, it seems likely that same useful sports, especially in the gardens of amateurs, are neglected and allowed to perish by not being watched for and propagated.

Some years ago I had a very curious sport of Gloire de Bourg-la-Reine, H.P. The bloom was perfectly globular, and like a Dahlia, every petal being quilled. The colour was that of the type, but shaded darker. So globular was it, that it was not an easy matter to say between which petals the eye was situated. I cut it a day past its best, and took it to the Norwich Show; but the morning was hot, and when my box was opened it looked faint and flabby, and was not shown after all. I was afraid that it would be looked upon as a monstrosity, and that I should lose points by it. I did not think much of sports then, did not propagate it, and a fortnight later left for a new home, and never saw the original plant again. Alas! for lost opportunities, it might have proved constant and good, and a new departure in form. Mrs. W. R. Raillem might by now have been a great success. I have learnt a lesson, but may never have such another chance.

Most rosarians have probably had sports of some sort. One year I budded several Briars from a single long shoot of Abel Grand without noticing anything particular about it. But all these plants proved to be of an entirely different habit from the original, the shoots were very long, and had entirely lost the well-known robust habit. It was a sport, which might, no doubt, have been called "Climbing Abel Grand," but, though these "climbing" sports may be of use to some people as pillar Roses, I did not want it, and purposely did not continue it. The blooms were like the type, but a little smaller, as is often the case in "climbing" sports.

I have at the present moment a strange sport of Marie Van Houtte in my garden, and it is much fasciated, and I left it out of curiosity to see how it would manage to bloom. It has accomplished this feat, thanks to a week's fine weather, in a very decorative style. Seventeen pretty flowers, not in clusters, but each with a nice footstalk of about 6 to 12 inches, the lower stalks being the longest, are now showing

around the top of the fasciated stem, and the whole is decidedly attractive.

We have but few good Roses which have originated from sports, and most of these are of recent origin. This would seem to show that the subject was now receiving increased attention, but probably the cause may be more rightly attributed to the very large number of Roses now grown and the higher cultivation they receive. The following are the most prominent among recent sports :—

THE BRIDE (T).—A most valuable American sport from Catherine Mermet. The original sometimes comes nearly white, especially if exposed to fierce sun, but such blooms are very different from The Bride, which has a distinct sulphur tinge never seen in the other. I fully expect to see The Bride shown next year if the weather be favourable, quite as large as its parent, and a most important acquisition it undoubtedly is for any purpose.

SUNSET (T.).—Also from America. A sport from Perle des Jardins, is an instance of the sport coming of a darker shade than the original. Perle des Jardins is pure yellow, while Sunset is of the colour of Rêve d'Or. If this sport had improved upon the habit of its type of coming divided and confused in its strong blooms, and good on its secondary and weaker shoots, it would have been more valuable than it is, but it is a useful strong-growing sort, good in autumn, and desirable, I should think, as a pot Rose.

PRIDE OF REIGATE (H.P.).—A curious sport from Comtesse d'Oxford, the petals being striped or splashed with white, originated, I believe, in the garden of an amateur. Some people do not much admire this Rose, but it is a good shape, and certainly very distinct, no one can possibly mistake it.

LADY ALICE (H.T.).—A white or nearly white form of Lady Mary Fitzwilliam, seems hardly sufficiently distinct from the original. Mr. George Paul, who is the propagator of Lady Alice, has received with the utmost good nature a considerable amount of chaff as to our all having "Lady Alice" among our "Lady Marys," but is still of opinion, I believe, that it is a distinct sport. Let us hope that it may prove so. Lady Mary Fitzwilliam is so good a Rose that any young ladies she may introduce as debutants will, I am sure, be favourably received.

SOUVENIR DE A. PRINCE (T.) is a pure white sport from Souvenir d'un Ami, which Mr. Prince showed this year for the gold medal at the Crystal Palace. This sport seems likely to be a success. The type is well known as a large pink Tea Rose of good and lasting shape, but quick to lose its colour. The blooms of the sport, as shown at the Crystal Palace, were certainly of the purest white, but the grand central spike of Souvenir d'un Ami was wanting. It was, however, shown in decidedly better form subsequently at Manchester and Darlington, and the shape of the original was recognisable. Rosarians will readily understand the value of a Niphetos with the shape and lasting qualities of Souvenir d'un Ami.

I hope some other correspondents will give us their experience in sports, as I quite think there is something to be learned in this way.—W. R. RAILLEM.

THE WEATHER AND GARDEN CROPS.

THE communications upon this subject have been so numerous that some must still be reserved to our next issue, and they are of too interesting a character to be reduced. Our best thanks are due to our readers for their prompt response to our request.

AYRSHIRE.

OUR rainfall in June was 2 inches, in July 3·35 inches, and up to the 13th of this present month we have had 1·90 inch. During the above time we have had very low temperature, with very little sunshine. Twice in July we registered at night 38° and 39° ; from the 1st of August up to the 13th we have had only about thirty hours of sunshine. With such unfavourable weather there are very few garden crops doing well. Peas have kept healthy, but have filled their pods very irregularly. Cauliflowers have done badly, also French Beans. Early Potatoes have been a good crop, but deficient in quality. Winter crops and Celery are looking well. It would be rather difficult to mention one flowering plant that has not suffered from the ungenial weather, except the Violas ; they appear to have had the weather that suits them, as they have flowered well and kept quite free from grubs. Carnations are looking well but late in flowering. Dahlias, single and double, are satisfactory. The above with some of the approved Beets and Cerastium are passable, but all Pelargoniums, except the bronze varieties, have made a poor show so far.—DAVID MURRAY, *Culzean Gardens, Maybole, Ayrshire.*

BEDFORDSHIRE.

IN June the weather was cold, dull and unsettled, when we registered 2·52 inches rain. In July rain fell on twenty-one days with very little sunshine, and at times a very low temperature. Total rainfall for the month 3·34 inches. Vegetable and fruit crops very much retarded. Apples of the Codlin type are a good average, also Blenheim Pippin, Ribston Pippin, King of the Pippins, Kerry Pippin, Court Pendû Plat, Devonshire Quarrenden, and Cellini Pippin, but Cox's Pippin is very scarce. Pears of the finer varieties are cracked, scabby, and poor. The following are the best :—Williams' Bon Chrêtien, Marie Louise, Pitmaston Duchess, Beurré Clairgeau, and Louise Bonne of Jersey, but late and small. The same remark applies to Peaches and Nectarines, but there is a good average crop. Small fruits are fairly good and plentiful. Strawberries suffered from the wet weather, but the following sorts stood the wet the best :—Amateur, Dr. Hogg, British Queen, and The Captain stood the wet better than the others, besides it was of a very bright and glossy colour. Laxton's Noble is a very showy fruit. I think it will make a good forcer, rather weak plants in 54-pots did well with me. This year Cherries are a good crop, especially Morellos. Potatoes are a good deal diseased where the ground is low and wet. The kidney type seems to have suffered the most. Most others are fairly good, but the tops show signs of disease by their scorched and shrivelled appearance. Peas have done badly, running so much to straw, and the pods not filling satisfactorily. The early type of Peas seem to have filled the best this season. Autumn-sown Onions sown on the 30th August, 1887, have done much better than those sown a fortnight earlier. French and Runner Beans have been almost at a standstill, but are now plentiful. Cauliflowers have been unusually good, and most vegetables are plentiful now. Field Cucumbers very late, not doing satisfactorily ; many of the vines dying. Some Strawberries have suffered from mildew, these we shall grub up and burn.

Roses have done badly, also mildewed and spoiled by wet. Pelargoniums of the Zonal type have shown to advantage, being bright and clear. Vesuvius, Henry Jacoby, and West Brighton Gem have flowered better than most varieties. The variegated sorts, Crystal Palace Gem, Golden Superb, Flower of Spring, and Mangle i, and Beauty of Oulton have been effective. Calceolarias Golden Gem and Aurea floribunda have stood the wet well ; Ageratums badly, Alternantheras ditto, but Tuberous Begonias stand the wet well, and I think they will be much sought after for bedding purposes. Stocks and Asters stood well.—G. R. ALLIS, *Old Warden Park Gardens, Biggleswade.*

BUCKINGHAMSHIRE

WE keep no rain gauge here, consequently cannot furnish the amount of rain in inches for June and July. The rainy weather, however, commenced the second week in the first named month and continued over the end of July, during which time we experienced a very low day temperature, and day after day passed without sunshine. The night temperature was also considerably below the average for both months.

Garden crops made slow progress with few exceptions, Cauliflowers and Cabbages benefiting much, the produce fine and plentiful. Peas were late, and although the wet weather caused rampant growth the pods filled slowly, and were much affected with maggot ; had the season been excessively dry we should not have expected worse. From imperfect fertilisation second crops of Broad Beans are a partial failure, in many instances the empty pods only swelling. Runner Beans are strong and now good ; the earliest blooms, however, failed to set. Onions are rampant in top growth, but bulb very slowly. Celery and other vegetables generally are excellent. In fruits, Strawberries suffered the most from excessive moisture. Bush fruits are very good, Apples thin ; the trees, however, have benefited much by the heavy rains.

Coniferous and other trees, with Rhododendrons, have revelled in the abundant moisture and made excellent growths. In the flower garden bedding plants generally have been much washed ; Violas, however, Archie Grant, dark blue, and Mrs. Gray, white, have flowered freely. Some large Fuchsias planted out early have also flowered well through the rain. Among herbaceous plants Delphiniums, Helianthus multiflorus, Anchusa, Achillea Ptarmica fl. pl. have done well. Tricolor and bronze bedding Pelargoniums have suffered from the dull wet weather ; the leafage is small, wrinkled, and stunted, and growth seems altogether crippled.—C. HERRIN, *Dropmore Gardens, Maidenhead.*

DENBIGHSHIRE.

THE weather here has been most trying for gardeners, farmers, and others, for the last two or three months rain descending nearly the whole of the time, and we had frost in July, while on August the 18th Marrows were blackened by frost, the thermometer standing at 30½°. All kitchen garden crops are good, rain suiting this garden admirably, the soil being light on a slope towards the south and on a gravelly bottom. First and second early Peas were most prolific, the varieties being Sangster's No. 1 and Telephone. Fillbasket and Hundredfold are our main crops, the latter growing to 9 or 10 feet in height, but the pods not filling satisfactorily. Veitch's Perfection is looking grand, full of vigour, and promises to do really good service. Potatoes are good, though not large, and there are no traces of disease as yet. Runner Beans are most prolific, and in fact all vegetable crops are grand. Strawberries have been a full crop, but the flavour was not good. Black Prince (for preserving) and President (for dessert) are the favourite varieties here. Raspberries were a fair crop, but many decayed through wet. Gooseberries, Black, Red, and White Currants are good both in quantity and quality. Cherries good ; Pears not half a crop ; Apples very irregular ; Peaches and Apricots good, the former mildewed owing to so much wet and cold nights. Plums a failure, with the exception of Victorias, which are good.

With regard to bedding plants Pelargoniums are grown strong and leafy, but with little flower. Tropæolums, Lobelias, and Calceolarias are showy. The herbaceous borders have been remarkably gay and are now. The most conspicuous are Delphiniums, Phlox, Lychnis chaldedonica, Heleniums, Hollyhocks, Boeconia, Lythrum roseum, and Fuchsia Riccartoni, all enjoying a wet and cool summer.—J. OLDFIELD, *Chirk Castle Gardens, Denbigh, North Wales.*

DERBYSHIRE.

THE rainfall for the six months ending June 30th was exceptionally low, much under average, especially so to the end of May, at which time we only registered 7·95 inches. June increased this to 10·10 inches, but as our average rainfall taking it over a series of years amounts to about 34 inches, it will he seen the above is a light record. July has in a measure compensated us by an exceptionally heavy downpour, 5·39 inches; still the season so far cannot he called a wet one measured by the quantity of rain that has fallen, but will be remembered rather for its almost total absence of sunshine and its exceedingly low temperature. May was dry and rather bright with cold east winds, which had the effect of almost entirely checking the growth of vegetation. June being dull and rather damp, although the temperature was still low, was more favourable to growth and also to the planting of hedding plants, which started away well, and have since succeeded beyond expectation; not only here, but I have observed the same at other gardens, notably the Abbey Park, Leicester, where the hedding is looking really heautiful. Violas no doubt have been the plants *par excellence* for bedding this summer; they are in grand form, and their great success this year will, I have no doubt, give an impetus to their more extended cultivation. They are so easily and so inexpensively grown.

I suppose the extreme floriferousness of forest trees, flowering shrubs, and herbaceous plants, as well as the almost unprecedented profuse display of Rhododendron we have had, must be attributed chiefly to the agency of the hot and brilliant sunshine of last year in so perfectly maturing growth, and also in a measure to the lateness of growth this spring, trees and plants thereby escaping the usually destructive spring frosts. Where lawns have been regularly mown and well kept they have never looked more perfect than this year. Here they have given much pleasure to many thousands of Americans and other foreigners who never see such heautiful lawns away from England.

In the kitchen gardens the bad weather has quite upset one's calculations as to the time of crops coming in. I am afraid if we remain much longer without warm weather (to-day it is colder than Michaelmas) that many subjects, such as French and Kidney Beans, will perish from cold before they give any yield at all. In the kitchen garden the only item of satisfaction one has is the wonderful crops on the bush fruit. I certainly never remember heavier crops of Gooseberries, Currants of all sorts, Raspherries, and Morello Cherries; but Strawherries have heen poor, half the fruit has decayed on the ground.—OWEN THOMAS, *Chatsworth Gardens, Chesterfield.*

HUNTINGDONSHIRE.

THE weather and the rainfall during June and July this year has been the exact opposite to the corresponding months of last year. Those two months in 1887 were hot, with little rain, but this year there have heen copious downpours with low temperatures. Fruit is late; Strawberries and many Apricots are ripening and decaying. Vegetables have been abundant, and likely to be so during the coming autumn and winter. Early Potatoes have turned out well and of very good quality; the disease, however, has now made its appearance. The showery weather has proved useful for Celery, and getting out good hreadths of Brussels Sprouts, Savoys, Broccoli, and other winter Greens, which are now growing freely. Weeds also grow apace, and will get the upper hand of many gardeners where lahour is limited. Kidney Beans and Vegetahle Marrows are plentiful.

The rains during the last two months have heen beneficial to outdoor ferneries, and especially to alpine rockery plants. Phlox setacea varieties, Alpine Auriculas, Sedums, Saxifrages, Auhrietias, douhle and single Primroses, and Myosotis, have all grown and flowered well, with many other dwarf plants. Border plants have henefited by the June rains. Phloxes are flowering well, and one of the hest August plants to cut from has grown remarkahly vigorous—viz., Harpalium rigidum. This plant should find a place in every garden where large quantities of cut flowers are wanted. Annuals are not much grown here, but such few that are, including Collinsia, Coreopsis, Godetia, Mignonette, Zinnias, Cornflowers, hlue and yellow, Salpiglossis, Asters, Stocks, and a few others, have better growth and more flowers than last year. Beds with the usual assortment of hedding plants will certainly be hetter furnished with growth than last year.—A. HARDING, *Orton Hall Gardens, Hunts.*

KENT.

IN reply to your suggestion in the Journal as to recording the effects of the recent wet weather on the crops, I beg to state that here on our gravelly soil resting on chalk we have not suffered very much from the wet, although we registered 6½ inches, the heaviest rainfall for one month since October 1882, but the low temperature and absence of sun has retarded growth. Potatoes, Broad Beans, and roots generally are doing well; Peas have not filled very well; Beans, both dwarf and runners, failed to set the early flowers, but are doing better since the warmer weather; Onions have made plenty of top growth, are hulhing fairly well, but will he late harvesting; white Celery is very pithy, hut red, on the other hand, is very solid. All fresh planted trees are making rapid growth, as also are Conifers, but nearly all the Pine family have been infested with the spruce gall aphis (Chermes abietis) not only in shruhheries, but also on single specimens. Is this pest prevalent in other parts of the country this season? Perhaps some of the numerous readers of the Journal can tell.—ROBERT FILKINS, *Gardener to G. Buchanan, Esq., Tower Fields, Keston.*

LINCOLNSHIRE.

JUNE was a variable month, but I do not register the temperature. The total rainfall for June was 1·56 inch. Rain fell on thirteen days. July was a very cold wet month. Rain fell on twenty-one days, the greatest amount falling on the 2nd, 0·73; 4th, 0·71; 15th, 0·93; 17th, 0·52; 22nd, 0.32; 27th, 0·35; 28th, 0·48; 29tb, 0·70. Total rainfall for July, 6.09 inches. Almost all kinds of vegetables are hackward. Our spring Cahhages came in well and in good time (Ellam's variety excellent). Broccoli was very late, the March varieties coming in May. Cattell's Eclipse Broccoli was our latest and best this year. Turnip Early Milan, first sowing bolted for the first time this spring. Through the cold weather our early Peas did not fill before June 27th, Ringleader variety, sown out of doors Decemher 15th, 1887. That sown in boxes the sparrows destroyed. Early Peas were soon over. Then came the pelting rain. the second earlies not moving for eleven days. Ahundance of fine Marrow Peas came in with August. I find old Ne Plus Ultra still the best all-round Pea. Cos Lettuces bolted nearly as fast as they do in a dry summer. Strawberries have been a good crop, Black Prince and President being our best croppers this year, Sir Joseph Paxton running a great deal to foliage. I tried Pauline Strawherry this year. The first flowers of Black Prince Strawberry opened May 7th; Pauline opened its first flowers May 18th. Black Prince was ripe two days hefore Pauline, June 24th and 26th respectively, planted side by side on south horder. Pauline is a very strong grower, fruit large, but few of them. It will not drive out Black Prince for some time to come. I think. What a contrast there is hetween Tomatoes this year and last. At this time last year some of them had hroken their stakes with their load of fruit. This year we have a few fruits about the size of pigeons' eggs, although the plants are kept to a single stem. The bottom leaves look as though they had been hurnt; they first curl up, then turn brown and fall. Apples and Pears are not half of a crop. Some trees of the same variety are carrying full crops, others almost nil. Heavy crop of Red and White Currants. Gooseberries good. Raspberries a fine crop, and lasting for a long time in bearing. Asparagus very fine. Dwarf Kidney Beans came in August 8th. Runners are not gathered yet, but they are full of flower and looking well. Potatoes, a heavy crop and very large, Veitch's Ashleaf the best; the disease has shown itself. Brussels Sprouts, Cauliflower, Broccoli, Kales, &c., are looking well.

In the flower garden Begonias are far before Pelargoniums for bedding. The rain suits the Begonias. Wind is their greatest enemy; it breaks the flowers very much. Poppies are grand. Canterbury Bells have made a fine show for a long time. Sweet Williams very good, and some of them fine yet. Delphiniums fine. Phlox Drummondi very good. Petunias medium in quality. We never had Mignonette so good in the horders. Douhle Clarkias are splendid. Sweet Alyssum has been like a white sheet for weeks. Convolvulus is very showy in the morning. Cornflowers (Centaurea Cyanus) have grown taller this year, and not quite as much hloom. Godetias are beautiful. Kaulfussia amelloides has only done fairly well. Indian Pinks have not done well. Mesembryanthemum tricolor not satisfactory. Portulacas and Ice Plant complete failures. Candytuft has done well. Stocks and Asters fairly well. Gaillardias are doing well. Roses have shown plenty of bloom, but many have been spoiled.—G. PICKER, *The Gardens, Branston Hall, Lincoln.*

NORTHUMBERLAND.

DURING the month of June rain fell on thirteen days. Total during the month, 2·59 inches; mean day temperature, 56½°; mean night temperature, 44½°. In July rain fell on nineteen days. Total for the month, 4·36 inches; temperature, mean day, 54¼°; mean night, 47°. Temperature for June, 1887, mean day, 63°; mean night, 48°. July, mean day, 68°; mean night, 52°.

With a few exceptions the wind has blown from the points between the east and north-west throughout the season. On the 14th of June we had a severe hailstorm, which riddled all tender leaves, and quite destroyed some of the French Beans, Scarlet Runners, Vegetahle Marrows, and spoilt Tomatoes on walls, also doing great damage to the Apple crop, which had previously flowered to perfection. A quantity of Gooseberries fell, hut are yielding a crop of good fruit mostly. Bush fruit generally are an average crop, Strawherries very poor, Vicomtesse Hericart de Thury excepted. In cold seasons this excels all; it never fails. A few planted last year are now yielding fine fruit. Of others Helena Gloede is a good late variety. Peas have grown well, hut do not fill the pods. Potatoes are now a fine crop, but disease has made its appearance in several places. Beauty of Hehron is one of the best early, and very generally grown.

In the spring flower garden Wallflowers Belvoir Castle yellow, Veitch's, dwarf dark and Covent Garden dark, were unique, sown in the beginning of May last year, transplanted in July, again planted in October. Gold-laced Polyanthuses and others were splendid for spring. Of summer bedding Tropæolum Vesuvius surpasses all Pelargoniums for blooming. Of the latter, Henry Jacoby and John Gibbons are the best. A white Snapdragon is one of the hest plants in the garden, propagated hy cuttings in pots in the autumn. Yellow Calceolarias are doing well. Papaver umbrosum is good from seed sown in heat in spring. The flowers are deep red with a dark hlotch, and in the distance appear floating in the air 2 feet high. It is the best flowering plant in the heds. Iceland Poppies, in three colours, are good. Spiræa Aruncus has been splendid.—GEORGE HARRIS, *Alnwick Castle Gardens.*

STAFFORDSHIRE.

THIS has been a very cold, dull, rainless half year. Most garden crops are late in consequence. Vegetahle crops were thin and puny, but since the rains in July everything has grown enormously. They

have lost the stunted starved appearance they had before. This has been the most prolific season for grubs and insect pests I have known, both above and under-ground. Cauliflowers, Savoys, and Brussels Sprouts we have planted and filled up several times, and still they go.

We have lost nearly all our Lilium candidum and Stocks from the same cause. Phloxes, Delphiniums, Larkspurs, Sweet Williams, Iris, Daffodils, Narcissus, and Carnations have done very well, though late. Our annuals generally have not done well, Asters, Tagetes, and Everlasting Flowers are not in bloom yet. Of bedding plants, Lobelias and Calceolarias have done well, and of Pelargoniums, such strong-growing varieties as Henry Jacoby have been satisfactory and are now flowering freely. The variegated Pelargoniums have made but little progress; Iresine has always done well till this season. Coleus Verschaffelti has lost all its leaves, and the stems decayed. Last year we were gathering Tomatoes out of doors by the bushel at this time. We have the same varieties in the same position (against a south warm wall) this year growing furiously, but scarcely in bloom.

Temperature and rainfall in June 1888.—Lowest night temperature, 41°; highest day temperature, 80°; lowest mean night temperature, 48°; highest mean day temperature, 66°; rainfall, 1·75 inch; highest barometer reading, 29·87; lowest barometer reading, 29·20. The rainfall for the past half year to June 30th is as follows:—January, 1·08; February, 0·44; March, 1·95; April, 1·53; May, 0·44; June, 1·75; total, 7·19. Temperature and rainfall in July 1888.—Lowest night temperature, 39°; highest day temperature, 70°; lowest mean night temperature, 51°; highest mean day temperature, 65°; rainfall, 6·06 inches; highest barometer reading, 29·72; lowest barometer reading, 29·08.—W. BENNETT, *Rangemore Gardens, Burton-on-Trent.*

THE months of June and July have been in this district remarkable for an average low temperature, and from the 20th June until the 6th August inclusive we had rain, frequently accompanied by thunder and lightning, almost every day. On the 4th July the thunderstorm was terrific, and there was also a heavy storm of hail which considerably damaged the foliage of trees and of flowering plants.

Kitchen garden crops are good, and the weather does not appear to have had any other effect than to cause them to be a few days later than usual in one or two instances—Kidney Beans for example. Considerable difficulty was experienced in gathering the Raspberry crop owing to the frequency of the thunderstorms. Where the ground has been deeply cultivated the crops have never looked back; but on ground that only had its surface "tickled" they looked cold and unhappy; but as there is very little land about here cultivated in that style the general crops are, as I have previously stated, very good.

All fruit is swelling to a good size. Apples, Plums, Peaches, and small fruits are very good crops; Pears and Damsons half crops; Apricots a failure comparatively; Walnuts are abundant; Cob Nuts scarce.

Amongst annuals the most satisfactory have been Ten-week Stocks, Phlox Drummondi, Mignonette, Bartonia aurea, Nemophilas of variety, Convolvulus minor, Salpiglossis, Godetias, Clarkias, Sweet Sultan, and Yellow Sultan (Amherboa moschata and odorata), Collinsias, Chrysanthemums, Linums, Campanula Lorei, Silene pendula compacta, Schizanthus of sorts, and Whitlavia grandiflora; Œnotheras and Eschscholtzias, and Candytuft.

Of perennials the following have withstood the weather very well:—Pæonies, Spiræas, Veronicas, Dictamnus Fraxinella, Campanulas, Pyrethrums, Violas, Chrysanthemum maximum, Anemone japonica Honorine Jobert, Delphiniums, Antirrhinums, Lupins, herbaceous Phlox, Phlox setacea, Hemerocallis, Lychnis Flos-Cuculi, Aquilegias, Irises, Lilium candidum, Lathyrus latifolius, Clematis flammula, Lysimachia thyrsiflora, Hesperis matronalis flore pleno, Bocconia cordata, white Pinks, Iberis, &c.

Bedding out has not been a successful type of gardening this year, because the beds are only just looking anything like gay; but the old varieties of plants used for that purpose have held their ground this season. The best of the Pelargoniums, flowering or foliage, are Henry Jacoby (crimson), Mrs. Turner (pink), Vesuvius (scarlet), White Clipper (White). Mrs. Pollock, Bijou, Crystal Palace Gem, Flower of Spring, Manglesii, and Duke of Edinburgh; Lobelia Blue Stone, and Emperor William; Verbena Melindris splendens and V. venosa; Ageratum Imperial Dwarf.

The best foliage plants, either for mixtures or carpet bedding, have been Polemonium cæruleum variegatum, Pyrethrum aureum, Kleinia repens, Centaurea candidissima, Sedum deltoideum variegatum, Antennaria tomentosa, Iresine Lindeni, Salvia argentea, Herniaria glabra, Zea japonica variegata, Ricinus Gibsoni, Mesembryanthemum cordifolium variegatum and M. glabrum, and Achillea tomentosa. Alternantheras are a failure.—J. UDALE, *Elford Hall Gardens, Tamworth.*

SURREY.

THE rainfall here in June amounted to 3·80 inches, and there were only six days on which rain did not fall. In July we had 4·94 inches with two fine days. The total rainfall for the year up to the end of July has been 21·54 inches, but the season has not been so bad for vegetation here as was 1879, when the rainfall in June was 5·66 with five fine days, and in July 5·48 with two fine days. The total rainfall then up to the end of July was 29 inches.

Our early Peas this year were an excellent crop, but the second crops do not fill well. Early Potatoes are much diseased, and the late varieties are affected. Cabbages, Cauliflowers, Turnips, Onions, and Carrots are all good. Scarlet Runners, Dwarf and Broad Beans are late, and not good. Pears are a good crop; Apples and Plums partial; Strawberries, Gooseberries, Raspberries, and Currants are abundant, though wanting in flavour.

Roses have been very inferior; Hollyhocks much diseased. Coleuses, Alternantheras, and other sub-tropical plants are less effective than when planted out. Liliums, Dahlias, Carnations, Verbenas, &c., seem to be enjoying the weather. There is a decided improvement all round owing to the last few days' sunshine.—EDWARD J. BAYMAN, *Holmbury Gardens, Dorking.*

THE months of June and July have been remarkable for an unusually large quantity of rain and a very low temperature. Generally this has been against the fruit crops, causing much stone fruit to fall, and affecting small fruit as regards quality. Shrubs have enjoyed the cool moist weather, and newly planted ones have done well almost without exception. Early Potatoes have yielded well, but are now showing disease. Late ones have plenty of tubers, but I fear from the present appearance of the haulm disease is likely to follow.

Amongst flowering plants hardy perennials have been decidedly the best. The following have been or are still good:—Erigeron speciosum, Lilium candidum, Spiræas, Campanula persicifolia, Achillea Ptarmica plena, Sweet Williams, Violas, Pansies, Funkias, Echinops ruthenicus, Papaver orientale (fine), P. nudicaule, Centaurea montana, Harpalium rigidum, Lychnis chalcedonica, L. coronaria, Lilium umbellatum, and L. croceum. Anemone japonica will flower later on. Many annuals are doing well. The following are some of the best:—Stocks, Asters, Lupinus nanus, Clarkias, Godetias, Viscaria cardinalis, Collinsia bicolor, Nemophila insignis, Candytufts, Bartonia aurea. Ordinary bedding plants have done badly. Tender foliage plants have made but little growth. Pelargoniums are beginning to flower a little now, but may be regarded as almost a failure. Our best beds are those filled with Verbenas, Stocks, Asters, and Salpiglossis. Our worst, Zinnias and Portulaca. All green vegetables have done well. Peas in particular.—E. BUTTS, *Leigham Court Gardens, Streatham Hill, S.W.*

As I did not see Surrey represented in the interesting report from the counties, I venture, though late, to supply a return from Mid-Surrey. Rainfall, 158 above sea. June, 1887, 0·71 inch; June, 1888, 3·91 inches; July, 1887, 1·01 inch; July, 1888, 5·10 inches. Wet days:—June, 1887, (2); June, 1888, (16); July, 1887, (8); July, 1888, (21). June, 1887, maximum temperature, 83°, 15th; June, 1888, maximum temperature, 82°, 25th; July, 1887, maximum temperature, 86°, 4th; July, 1888, maximum temperature, 70°, 13th, 14th, and 19th. I observe in seven instances, amid very close observing of other things, the rainfall is not given, and probably no rain gauge is kept. The cost of this now is so trifling, and the value of its record (especially to Mr. Symons) so considerable, that it is to be hoped they will be more generally adopted. The added interest to a rainy day or a thunderstorm is then very considerable.—A. C.

YORKSHIRE.

THE weather in this district during June and July has been highly detrimental to all garden crops. Peas have grown far beyond their ordinary height, with few and badly filled pods. In this respect all varieties are alike. The varieties which have done best with us are Lightning, X. L. All, Gladiator, and Prodigy. Broad Beans, Scarlet Runners, and Kidney Beans are almost a total failure. Vegetable Marrows present a stunted and starved appearance, with little prospect of many fruits coming to maturity. Potatoes have grown more to top than tubers, which are small, very late, and watery. The best are the old Ash-leaf, Veitch's Improved Ash-leaf, and Myatt's Prolific. Cauliflowers, though late, have done fairly well, Veitch's Extra Early and Walcheren are the best. Autumn and spring-sown Onions have done badly, by far the best of the former is Early White Naples; the others are not sufficiently advanced to form an opinion.

Bedding plants have made little progress. Pelargoniums in particular present a miserable appearance. Calceolarias, Lobelias, and Violas are doing well. Most perennials have made good growth and flowered satisfactorily. Very few annuals are grown here, and owing to the long continued cold weather they are making slow progress.

During June rain fell nineteen days, making a total of 1·98 inch. In July it rained twenty-one days, measuring 6·08 inches.—J. MCINDOE, *Hutton Hall Gardens, Guisboro'.*

THE weather in this neighbourhood during the months of June and July has been very cold, sunless, and wet. We have not kept a register of the rainfall, and therefore cannot speak as to the quantity which has fallen, but can safely say that it is considerably more than that of the same two months of any of the five preceding years. Under such ungenial influences few things in the fruit garden have done what may be termed well, except all varieties of Currants, Raspberries, Gooseberries, Cherries, and Filberts, which have borne, or are bearing, very fine crops. Apples, Pears, Apricots, Plums, and Strawberries are, with very few exceptions, a failure. Peaches, Nectarines, and early Grapes have yielded a splendid crop and finished well; but late Grapes have failed to take on the bloom they have formerly done with us. Some bunches of Black Hamburgh are almost green, and the flavour is not what we have usually had in them.

Cabbages, Celery, Globe Artichokes, and Turnips are the most satisfactory among vegetables, and Carrots, Beet, and Parsnips are fairly

good. Peas have produced plenty of haulm, but the pods do not fill. Onions fail to bulb. Potatoes are large and free from disease, but have few tubers to the haulm. Broad Beans which were forced and planted out have borne a heavy crop of well-filled pods, but sowings in the open are a failure. Scarlet Runners are just commencing to flower, and Dwarfs are not yet sufficiently large for use.

Flowers out of doors have been exceedingly scarce this year, especially so is the case in reference to Pelargoniums and Lobelias; however, Calceolarias and Violas have well filled their beds, and are now a mass of bloom. Early flowering Chrysanthemums and Carnations promise an abundant supply of bloom, and Pentstemons are finer than I have ever seen them. Single Pyrethrums were also finer this year than we have had them. Mignonette is poor, and most of the more tender plants, such as Heliotrope and single Dahlias, will, I fear, yield us few flowers this season. Roses we should have had in abundance, but the rain proved so inimical to their buds that most of them decayed before being fully developed.

The soil we have to deal with is a calcareous loam, resting chiefly upon gravel, and situated in a low-lying valley on the banks of the Rye.—J. RIDDELL, *The Gardens, Duncombe Park, Helmsley.*

Notes & Gleanings

EVENTS OF THE WEEK.—Shows still continue numerous, but the present is not a very full week in the south. On Thursday, 23rd, the Wilts Horticultural Society holds its annual Show in Salisbury, Dunkeld and Aberdeen societies having shows in the north on the same day. August 24th is fixed for the Perth Show (two days), and the members of the National Chrysanthemum Society with their friends have arranged for a trip on that day (Friday) to Baron Schröder's garden, The Dell, Egham. On Tuesday, August 28th, the Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, Westminster. A Show will be held at Sherborne on Wednesday, the 29th inst.

—— THE POTATO DISEASE AT CHISWICK.—The attack of the murrain on the Potatoes on trial in the Royal Horticultural Society's gardens is very pronounced, in the case of some varieties virulent, and few have wholly escaped. They were examined by the Committee on Tuesday last, and an official report will be prepared for publication.

—— THE GARDENERS' ORPHAN FUND.—Through the kindness of Mr. and Mrs. Hopwood the Gardens at Ketton Hall, Stamford, were open to the public in aid of the above on Monday, August 20th. The weather was changeable and not very encouraging, but there was a good attendance; £3 17s. was taken for admission, and 2s. 8½d. in collecting boxes, leaving a balance in favour of the fund of £2 7s. 8½d, after paying for printing and advertising.

—— THE WEATHER.—"B. D." writes from Perthshire:—"The past week has been one of dry though coldish weather, with bright sunshine, and hopes were raised accordingly. The barometer has, however, been falling steadily for the last twenty-four hours, and to-day (20th) is again very wet." In the south the weather has been fine with occasional showers this week.

—— WE learn that MR. H. N. RIDLEY, one of the assistants in the botanical department of the British Museum, has been appointed superintendent of the Singapore Botanic Garden.

—— ARTIFICIAL MANURES.—Mr. H. Dunkin writes:—"I notice two slight printer's errors in my late article on 'Artificial Manures.' On page 146, the sentence that reads, 'I am a firm believer in steady and continual progress in *my* walk of life,' should be in *any* walk of life. And a little farther on, 'Trifling attention commonly known as *fads* (not facts) are better left alone.'"

—— THE meeting of the BRITISH ASSOCIATION will take place at Bath this year September 3rd to 13th. In the Biology Section, Mr. Thiselton Dyer will be President. On September 5th and 6th the annual Fruit and Flower Show will be held in the Sydney Gardens, to which all members of the Association will be admitted.

—— GARDENING APPOINTMENT.—Mr. N. Molyneux, for the past two years head gardener to Mrs. Davies, Burton Hill, Petworth, Sussex, has been appointed to the charge of the gardens of J. Carpenter Garnier Esq., Rooksbury Park, Wickham, Fareham, Hants. Mr. R. Gray, late gardener at Chevening, Sevenoaks, has been appointed head gardener to Mr. Spender Clay at Ford Manor, Surrey.

—— RELATIVE to KETTON GEM MELON certificated at Liverpool, Mr. W. Bardney writes:—"I had the pleasure of tasting Ketton Gem as well as Dickson's Exquisite, which I have long considered the best flavoured Melon in cultivation, but on this occasion at least it was excelled by the one exhibited by Mr. Divers. It was well worthy of the certificate that was awarded it. Perhaps Mr. Divers will say if it possesses a good constitution and fruits freely on the first laterals, and whether the fruit exhibited is about its size when, say, four fruits are taken from healthy plants on the first laterals."

—— THE YORK GALA.—It will come as a surprise to many that Mr. John Wilson, for thirty years the Secretary, has resigned the secretaryship. He undertook that position at the birth of the Society, and exhibitors at the Gala know quite well how much confidence was created by the courteous attention received at Mr. Wilson's hands, for he was always a thorough business man, kind to all, and will be missed at the York Galas. Mr. Wilson is retiring altogether from the various offices of trust he held in York, and purposes living near London, and we are quite sure he will carry with him the heartiest wishes for his health and Mrs. Wilson's also, in his well earned retirement.

—— THE WAKEFIELD PAXTON SOCIETY.—On Thursday evening last the Committee of the Paxton Society met at the "Saw Hotel" to pass the accounts in connection with the recent Window Garden Exhibition held in the Volunteers' Drill Shed. The accounts were laid before the meeting by Messrs. G. W. Fallas and T. Garnett, the two Honorary Secretaries, when it was found that in consequence of the printing and advertising charges being heavier than in previous years the expenses exceeded the subscriptions by about £5 or £6, and a hope was expressed that not only would this deficit be met, but that additional subscriptions would be secured in order that a small balance might be carried forward towards the expenses of next year's Show. A hearty vote of thanks was passed to Mr. Kingswell, who not only made the Society a present of a quantity of decorative material, but also promised a liberal subscription towards wiping off the deficiency.

—— LOMBARDY POPLARS AND LIGHTNING.—Professor Asa Gray observed, says the *Newcastle Courant*, that the reason which lies at the bottom of the general belief, on the continent of Europe, that lightning strikes the Lombardy Poplar trees in preference to others is coming to light. Green herbage and green wood—sappy wood—are excellent conductors of electricity. A tree is shattered by lightning only when the discharge reaches the naked trunk or naked branches, which are poorer conductors. An old-fashioned Lombardy Poplar, by its height, by its complete covering of twigs and small branches, and their foliage down almost to the ground, and by its sappy wood, makes a capital lightning rod and a cheap one. To make it surer the trees should stand in moist ground or near water, for wet ground is a good conductor, and dry soil a poor one. It is recommended to plant a Lombardy Poplar near the house, and another close to the barn. If the ground is dry the nearer the well the better, except for the nuisance of the roots that will get into it.

—— IN the Report of the Conservator of FORESTS in CEYLON for 1887 it is remarked that though Sir Joseph Hooker in 1873 called attention to the rapid destruction of forests in that island, no steps were taken by the Government till 1882. In that year, as a result of a report of Mr. Vincent, of the Indian Forest Department, the Government turned its attention to the subject, and in 1855 the "Forest Ordinance" was issued. The objects of this Ordinance were, briefly, to select suitable areas of forest land and constitute them State Forests, to buy off any interests which private individuals might have in those lands, to place them under effective protection, and generally to systematise the forest conservancy. Even now the Crown forests are plundered in a wholesale fashion by organised bands of thieves, but it is hoped in a short time to put an end to this, and make the forests of Ceylon as remunerative, comparatively speaking, as those of India, where they produce a substantial revenue. Ruin has threatened the Ceylon forests, just as it threatened the forests of Jinjira, in Western India, where three-fourths of a vast forest forty miles long, and from fifteen to a hundred miles in breadth, was destroyed, and the remainder with difficulty saved.

—— "W. D., *Solihull*," remarks :—"Your correspondents, "Experientia Docet," and "J. H. E.," write of the VIOLA with an evident admiration of the plant. Mine are in grand form still, a long border of elegans, pale lavender, with a front row of Countess of Hopetown, white, is a sight worth seeing. Some of the yellows are blooming grandly, especially Bullion and Golden Prince Improved, and Ardwell Gem, pale yellow. These are three "everybody's" varieties. Dean's True Blue is far away the best blue, of compact habit, and very floriferous, and is not a mass of flowers here. Purples do not stand so much rain, as the flower buds damp off, and the best of all with me for standing moist weather is Unique, rich purple, with slight marking of white in the top petal. Two of Mr. Baxter's newer Violas, Ethel Baxter, shaded rose and plum colour, is truly a gem, so distinct and profuse, and stands bad weather well. Spotted Gem, another of Mr. Baxter's seedlings, is very lovely. Other varieties now in perfection here are Duchess of Albany, Queen of Lilacs, Bronze Queen, and a new dwarf rich black purple, Sir Joseph Terry. Many others, such as Mrs Gray, are very showy, but those I have named will suit all growers. It has taken some time to make the Viola popular, but the good time has come at last, and no garden in the kingdom should be without them, but once more the timely warning should be given. Plant at the proper time to be successful, but unfortunately late spring planting is often resorted to."

—— THE NATIONAL CO-OPERATIVE SHOW held at the Crystal Palace on August 18th, was an interesting gathering, the variety of the exhibits, the good quality distinguishing the majority, and their surprising numbers, constituting the Show one quite out of the common. The schedule itself was a wonderful production, some fifty pages being devoted to particulars of 327 classes, and the numerous money and special prizes offered, the latter including a large proportion of books contributed by different firms and authors. The whole of the classes were not for horticultural productions. There was a section for honey, and several others for specimens of workmen's skill in various trades, medals as well as prizes being offered in these classes, and the exhibits occupied considerable space. The horticultural portion was, however, extensively represented, the greater part of both naves being filled, four rows of tables stretching for some hundreds of feet. Vegetables formed the great feature of the Show, and the competition in most of these classes was extraordinary. This was especially noticeable in section 1, for members of industrial co-operative societies, in twenty-five of which five prizes were offered in each class. Thus, for a collection of six varieties of vegetables there were thirty-five competitors ; with thirty-six pods of Peas no less than seventy-six entered and showed, the classes for Beans, Carrots, Onions, Turnips, Vegetable Marrows, Celery, Potatoes, and Cabbages including from sixty to thirty exhibitors each. It was very satisfactory to observe the prevailing good quality of these exhibits, and it was only in a few cases, like Leeks and Radishes, where they were really poor, though rough coarse samples were noted in the Turnip and a few other classes. Potatoes looked well, not large, but mostly clean, even, and sound. Cut flowers were not so largely shown, and generally were not of such good quality. Plants, also, were scarcely of average cottagers' merit. Fruit was not exhibited in large quantities ; a few respectable collections were shown, Apples, Currants, and Gooseberries being the chief features in other classes.

—— IT has been thought desirable that the FAUNA AND FLORA OF THE LESSER ANTILLES, the smaller islands of the West Indian group, should be more thoroughly investigated, and the British Association having granted £100 to initiate a research in the islands, a Committee has been formed, *Nature* states, to carry out the project, comprising Prof. Flower, Mr. Carruthers, Mr. Thiselton Dyer, Dr. Günther, Prof. Newton, Mr. Sclater, Dr. Sharpe, Lieut-Col. Feilden, and Mr. D. Morris. Prof. Flower has been elected Chairman of the Committee ; Mr. Thiselton Dyer, Secretary ; and Mr. Sclater, Treasurer. Lieut.-Col. Feilden having accepted a Colonial appointment in Barbadoes will be in future resident at Bridge Town, where he will act as Local Secretary of the Committee, while Dr. H. A. Alford Nichols, F.L.S., C.M.Z.S., has agreed to assist in the same capacity in Dominica. In order to commence their investigations without delay, the Committee have secured the services of Mr. George A. Ramage, who was lately associated with Mr. Ridley in his expedition to the island of Fernando Noronha, and has since been collecting in Pernambuco. Mr. Ramage arrived in Dominica in March last, and has proceeded to his work with great zeal. In May, after passing five weeks at Laudat, on the right bank of the Roseau River, about 2000 feet above the sea level, he moved to St. Aroment, an estate belonging to Dr. Nicholls, just above Roseau, which he found to be a better locality for getting his plants dried. At Laudat he met with great difficulty in this matter on account of the extreme wetness of the climate. After exploring Dominica, Mr. Ramage will probably receive instructions to proceed to the other islands of the Leeward group, some of which are almost entirely unworked as regards their animal and vegetable life. Now that this important investigation has been so fairly started, it is hoped that little difficulty will be experienced in obtaining further assistance from the British Association and the Royal Society. Complete sets of all the specimens obtained will be placed in the British Museum and Kew Herbarium.

—— A MEETING of the members of the Council of the ENGLISH ARBORICULTURAL SOCIETY was held recently at the Farmers' Club Rooms, Corn Exchange, Newcastle. Mr. Cadwallader J. Bates, President of the Society, occupied the chair. Mr. J. F. Robinson, Burnopfield, read a paper entitled "Remarks on the Royal Commission on Forestry, with Some Statistical Information on the Possible Future of Timber-growing in England." He said, a Select Committee having been appointed for the purpose of considering whether, by the establishment of a school of forestry or otherwise, our woodlands could be made more remunerative, the idea had occurred to him that a few remarks on the proceedings of the Commission might not be altogether without interest. If that man were a benefactor who caused two blades of grass to grow where one grew before, so a man who caused two trees to grow where one grew, or a large tree where a small one existed, was also a benefactor. The question of the growth of timber at home in place of the quantities imported from abroad, though not so important as the question of food supply, was of some importance. The danger of relying almost solely on the importation of timber from abroad was in the first place the denudation of countries of timber to provide for the growth of cereals, and in the second place, as the amount of supply decreased the demand would increase with the growth of the population. The speaker went on to recite the main points on the evidence given before the Commission. The inquiry, "If our forests are not well managed could they be improved by a more practical and scientific knowledge on the part of our foresters ?" was generally answered by the witnesses in the affirmative. The evidence showed that there was much room for improvement in draining and planting, and especially in the management of small plantations. As to how the knowledge could be best obtained he agreed with the witnesses who insisted on young men receiving instructions in forests which were managed by capable men. Young men, in his view, should serve an apprenticeship of seven years, so that they might learn the habits and characteristics of their patients, and what their conditions were under different seasons. The utmost they could hope for was that, with the waste of forests elsewhere, a brighter future was in store for home forests, and that a considerable portion of the timber imported, to the amount of £16,000,000, might be raised at home. It was to be hoped that the Board of Forestry would be the means of diffusing scientific and useful information and instruction with regard to the management of woodland belonging to the State and private individuals, and that there might be no more reason for saying that we were not doing our best in utilising the productive capabilities of our possessions.

THE ROMANCE OF SEED-SOWING.

(*Continued from page 153.*)

ONE curious set of cases deserves a passing word while speaking of hairs. Several seeds, and also some fruits (*e.g.*, some Sages and Groundsels), are coated with short hairs containing spiral threads coiled up inside them. The hairs are usually pressed close to the seed or fruit, and kept down securely by a fibre of mucilage. The wind carries these seeds to some favourable soil, the dampness loosens the mucilage, the hairs spread out are ruptured and discharge the contained threads. These are highly elastic, and on protrusion fix the seed in the soil quite securely. Here, then, hairs serve to arrest the seeds or fruits after dispersion. The mucilage present on the seeds of Flax and Cress probably does similar duty when moistened by the damp soil.

III.—ANIMALS.—Just as animals play a large and important part in the fertilisation of flowers, so we find them taking their share in the dispersion of seeds and fruits. I cannot here give a tithe of the instances in which this is seen. A few must suffice. They perform their mission in different ways—some voluntarily, some unconsciously. While insects chiefly assist in fertilisation, birds and mammals are the principal agents in the work of dispersion. Fleshy fruits are attractive to

animals, because they serve as food. In these cases, therefore, the dispersion comes about by voluntary action. Three characters come into prominence when we consider this class of fruits—colour, fleshiness or juiciness, and hardness.

Colour has long been recognised as operating largely in the direction of dispersion of fruits and seeds. The æsthetic side of a bird's nature is by no means undeveloped, as we may see in many ways, and we know that birds are strongly attracted by the beautiful and varied hues of a large number of our wild berries and fruits. As we should expect, these colours are not developed until the fruit is ripe, or nearly so. It would, of course, operate injuriously, were it present at an immature stage, and Nature always takes care that during the time when a flower or a fruit needs protection it shall be so clothed or enclosed as to be inconspicuous and non-attractive. When, on the other hand, fertilisation is desired, colour and odour are laid under contribution in order to induce insects to visit the flower; when dispersion becomes necessary, colour and sweetness of taste in the fruit come into play to attract the animals of larger growth. Again, colour to be of service must, as a rule, be distinguishable at a distance. Accordingly we find that fruits develope tints that are easily set off against the background of green leaves, such as red, black, yellow, or white. Red is by far the commonest colour, varying from pink to scarlet or deep crimson. Between twenty and thirty of our native edible fruits have some shade or other of red. Among these may be named Strawberry, Raspberry, Barberry, Rose, Rowan tree, Dogwood, Honeysuckle, Holly, Arum, Asparagus, Lily of the Valley, and others. Next in frequency comes black, or hues closely approaching it—*i.e.*, dark green or dark purple. For instance, Blackberry, Sloe, Alder, Bilberry, Elder, Plum, Ivy, Privet, and Buckthorn. Of white fruits, Mistletoe, Myrtle, and Snowberry furnish examples. I can only, for the moment, think of one actually yellow native fruit—the Sea Buckthorn of our east coasts; but we often find yellow blended with other tints on the same fruits, as in Apple and Pear, and there are some yellow seeds, as in Cornflag, which are seen when the vessels open and expose them to view. Yellow, although a showy colour, would seem to lack the power to attract, and so is for the most part absent. Not only has colour in fruits gradually developed itself in response to animal selection, but fleshiness or juiciness is traceable to the same cause. The soft, juicy pulp is both pleasant to the taste (in most cases) and good for food. Accordingly, colour having served to attract, juiciness, and in many instances sweetness steps in to satisfy. The birds have found out that the two pretty much go together, and they take care to use their knowledge. Colour is the sign-board hung out to give notice of the delicious fare to be found inside.

Different parts of the plant share in the provision of the dainty, tempting food. In Strawberry, where the tiny fruitlets are gritty and ineatible, the receptacle or tip of the flower stalk enlarges by degrees into the red, juicy, sweet mass known to us all, and thus the fruits are devoured for the sake of the pulp in which they are embedded. In Raspberry and Blackberry the fruitlets themselves are juicy and sweet, and being thus better fitted to attract, we find that these plants possess fewer seeds, fewer being needed, since each one of the cluster can assert itself by means of its rich pulpy envelope. In Rose, we find fewer still; the brightly coloured hip—a development of the receptacle, hollowed out to contain the fruits (not seeds, these being inside the fruits)—presenting sufficient attraction in itself, both from its colour and composition. In Whitethorn, with only two seeds, each well protected by its own bony covering, we find perhaps the greatest attraction for birds, especially robins. Here the calyx tube forms part of the fruit. In Cherry, the outer part of the single fruit becomes juicy, as also in Plum, belonging to the same genus.

Colour and juiciness having done their part, we next find that hardness operates to prevent birds from damaging the seed. Nearly all the seeds of these fleshy fruits are protected by some tough or stony covering, such as the outside layer of the minute Strawberry fruits, or the stone of Cherry, Plum, or Hawthorn. In other cases, the outer layer of the seed itself is sufficiently tough to resist attack. In cases where the seeds themselves are edible, we often find them shut up within an envelope which is more or less bitter, as in Walnut, Beech, and the two Chestnuts. These are refused by birds, and the edible part of the seed is stored away to form food for the tiny embryo plant. Even where these edible seeds are sought for, as by squirrels, dispersion is very often effected, for many are dropped in transit, and others are forgotten and left to germinate away from the parent tree.

Birds disperse seeds in two ways. Either they carry off the fruit, and, devouring the juicy covering, drop the hard seed to the earth, or they swallow the fruits whole, as in Strawberry or Raspberry, and the indigestible seeds are dropped in the ordinary manner. We can easily see how powerful a method of dispersion is afforded by birds. Thrushes going from north to south in berry time must carry thousands of seeds to deposit them in the warmer climate. The American Currant (Phytolacca) was long ago introduced artificially into Bordeaux, its berries being used to colour wines. It flourishes now all over Southern France and Switzerland, and is by no means rare in the Tyrol, carried to these districts by birds.

Animals act as dispersers unconsciously, as I have already said. Many fruits possess hooked processes in the shape of curved hairs, or spines, or prickles. These become entangled in the wool or fur of sheep, cows, and other animals, and are thus effectually carried away. Of these examples are seen in wild Carrot, Bur Parsley, Hedge Parsley, Burdock, Agrimony, Avens, Enchanter's Nightshade, Hound's Tongue, Cleavers or Goose Grass (familiar to everyone who has clambered through a hedge), and some Forget-me-nots. In Burdock, the hooks are on the scales of the involucre surrounding the flowers, so that one hook being caught carries away several fruits, which further each possess a pappus. No wonder we find Burdock everywhere. Some seeds themselves are similarly hooked—the large Stitchwort, for example, which decks nearly every hedge bank in April.

Some foreign genera, such as the Mexican Martynia, or Devil's Claws, possess horns 3 or 4 inches long, and Martynia well merits its name by the way in which it attaches itself to horses' tails and irritates the innocent proprietors. Others, like Plumbago rosea, are viscid, and stick to animals by this means. In Myzodendron, a South American parasite, whose brilliant flowers and fruits brighten the dark Patagonian forests, the fruits are provided with three long, feathery, viscid appendages, and, either carried by birds, or wafted by breezes, to some tree, they fasten themselves to a twig until germination ensues, and then grow up into plants, feeding on the juices of the tree, where they have taken lodging and board without so much as "by your leave."—H. W. S. Worsley Benison, F.L.S. (in *the Journal of Microscopy*).

(To be continued.)

THE DISPUTED CUP AT BAWTRY SHOW.

As the matter of Viscountess Galway's special prize has been brought into your columns, on page 158, allow me a few words to explain what does not appear quite plain from Mr. Egglestone's letter. But first I must say that Mrs. Egglestone has returned the prize to me, and I hope will again try to win it, and be successful. It is always a double satisfaction to win such a prize two years together.

Circumstances which I need not now go into prevented the Committee holding the Show in Bawtry in 1886 or 1887, but in 1885 it was intended that the Show should be held annually. Viscount Galway was then, and is still, the President, and most of our list of patrons then are still supporting us; but in 1885 the Committee consisted of only two other gentlemen beside myself, and it was thought by several of the residents in the town that a larger Committee was desirable, and so at an early meeting this year a larger Committee was formed. I was Treasurer of the Show in 1885, but chose to take the more laborious position of Honorary Secretary on this occasion. As the claret jug was offered on condition of its being won twice, I made precisely the same rules for competition for it this year, and there was no reason for Mrs. Egglestone declining to return it for the forthcoming Show.

I did not know until seeing the Journal that the "fresh Committee" calls itself "The Bawtry Horticultural Society," though I have not the slightest objection to the title. What I object to is the implied demand by a fresh Committee for a prize they have nothing to do with. This you see is not the case, and I am glad that Mrs. Egglestone's second thoughts have proved to be the best.—W. F. Entwisle.

[We readily insert this letter, and are glad to find the matter is settled in what we consider the best way; but we are also bound to say our correspondent is in error in assuming that Mr. Egglestone wrote to us on the subject. We have not had a line from him nor anyone else at Firbeck.]

NOTES ON CACTUSES.

One of the most distinct of all the Cereus family is C. grandiflorus Maynardi, a hybrid produced many years ago from C. speciosissimus and the night-flowering C. grandiflorus, the colour of the flowers resembling the former, whilst in form they are more like the latter. In habit it partakes somewhat after the manner of both parents, but has not such a rambling habit as C. grandiflorus, and does not throw out aërial roots. In colour the flowers are rich red with faint tracings of orange and purple shades. In size and form it is very similar to C. grandiflorus but lacks its delicious perfume. It may be grown and flowered in a small compass, the plant which bore the bloom represented in the illustration (fig. 19) being in a 5-inch pot in Mr. C. M. Major's collection at Croydon. It should be said, however, that the plant in question was not in the best of health, the bloom consequently not being quite so fine either in size or colour as would be the case on a thoroughly healthy example. It should also be observed that this hybrid is not so free flowering as either of the parents, and is also more difficult to keep in a healthy state, having a habit of losing its roots during the winter months, and should consequently be watered with the greatest care, its beauty and distinctness being worthy of any extra attention that may be bestowed upon it.

During the last three or four years Mr. Major has derived much interest from a number of seedling Cactuses of the Phyllocactus section, and has at the present time a small batch of seedlings from Cereus grandiflorus Maynardi crossed with Phyllocactus Cooperi, a nearly white form most delicously scented. It is hoped by this cross to obtain some new forms, and to get a sweet-scented Cereus Maynardi. This year blooms of the latter have been fertilised with pollen from C. grandiflorus, and the plant is now carrying a fine fruit. The progeny from such a cross will be looked forward to with an extra amount of interest, Cereus Maynardi, from its

parentage (C. speciosissimus and C. grandiflorus) being half a night bloomer already, remaining open three nights, and if shaded from bright sun two days, so that recrossing with C. grandiflorus may not only add another part towards making it a true night flowerer, but may have the scent transmitted to C. Maynardi.

Raising seedlings, although so interesting, is a somewhat slow process, as, provided they thrive well, four or five years must elapse before any flowers appear, and in many cases a more extended length of time is necessary before the plants can be induced to bloom. The seedlings mentioned above number between 200 and 300, and during the last four seasons we have had the pleasure of seeing many of them bloom. They include several new shades of colour, and the majority of them are considered to be improvements on the old forms, having larger blooms of more substance, and are altogether a most interesting young family. Another very beautiful Cereus is C. tuberosus, a variety obtained from the Continent a few years ago. It bears a most beautiful flower of bright rosy pink colour, and is sweet-scented. It is of small cylindrical growth, and is well worthy of notice. Amongst others might be named C. candicans, which, although being in the collection some thirty years, is only remarkable for its slowness of growth, and that in spite of all endeavours to induce it to bloom it persistently refuses to do so. Many more varieties of Cereus might be noticed, and they are all more or less beautiful, and well worthy of more extended cultivation.

The Echinocereus should receive a passing notice; some of the varieties being very beautiful when in bloom, and when not in flower their remarkable appearance are always objects of attraction. E. Blanckii is very handsome, and also very free both in habit of growth as well as flowering. E. Fendleri is a very desirable sort to grow, and it is said that in suitable positions is quite hardy, as are some others of the Echinocereus. The blooms of Echinocereus are more lasting than most other Cactus flowers. Some of them will open every day for a week, and in some instances longer than that.



FIG. 19.—CEREUS GRANDIFLORUS MAYNARDI.

Echinocactus, known as the Hedgehog Cactus, contains some very remarkable forms of growth and very beautiful flowers of various colours, and a few should be grown in every collection of plants of this description. Echinopses and Mamillarias are closely allied to the above, and contains amongst their number some of the most curious forms of vegetable life. These all thrive in a satisfactory manner if potted in a thoroughly porous soil. The pots

should not be larger than necessary for the plants to fit in, and abundance of drainage should be provided.

CEREUS GRANDIFLORUS MAYNARDI.

"This magnificent hybrid is unfortunately now rather scarce, yet its beauty and distinctness entitle it to prominent attention. In 1837 Mr. H. Kenny, gardener to Viscount Maynard, Easton Lodge, Dunmow, Essex, crossed C. speciosissimus with pollen from C. grandiflorus, and, the fertilisation proving successful, seeds were obtained which produced the plant under notice. This combined the characters of the parents in a striking manner, the habit of growth and form of the flowers of C. grandiflorus, with the addition of the rich colour of C. speciosissimus, rendering it invaluable. The flowers are 9 to 11 inches in diameter, and 7 to 9 inches long, the petals more cupped than in the ordinary C. grandiflorus; they are rich red with a tinge of orange, and usually last for two or three days, opening every evening. At its original home, Easton Lodge, now the residence of Lord and Lady Brooke, the plant had been quite lost, until recently, by the generosity of Mr. Major of Croydon, a specimen was furnished to the gardener, Mr. H. Lister."—(*Castle's "Cactaceous Plants."*)

HORTICULTURAL SHOWS.

TAUNTON HORTICULTURAL SOCIETY'S SHOW.—Aug. 16th.

When a provincial Society expends on a single day's exhibition between £500 and £600, out of which more than £250 is allotted for prizes, and when its leading prize amounts to the handsome sum of £20, it may be fairly classed as one of the principal societies in the kingdom: and it is no wonder that it attracts to it some of our foremost men. Such is the Taunton Deane Society, which has now for years held its annual Exhibition—unlike we poor creatures in this part of England, where a society of the most moderate dimensions can hardly be kept together, and where, when a show is held, even those who have subscribed do not use their tickets. The whole countryside is astir for the Taunton Show, the neighbouring gentry make a point of coming, the town is gaily decorated with flags, villagers troop in from all around, the streets are densely crowded, the most tempting delicacies are displayed on all sides, whelks and periwinkles, sour Apples, and hard Pears stop the gangway—and, in fact, all, gentle and simple, regard it as the great day of the year. The arrangements are all excellent, a first rate band is always engaged, a grand display of fireworks takes place at night, and when the weather is favourable a financial success is assured. The last two years have been unfavourable financially, but this year there was an increase all round.

One went to Taunton this year with some misgiving. The season was a late one, and as when I left home there was not a Gladiolus in bloom in my garden, and other flowers were late, I felt that there must, unless the climate of the West of England were very much milder, be a falling off in this respect; while I feared that the death of Mr. Cleave of Crediton would remove one of the largest exhibitors and deprive the Show of the fine plants grown by his able gardener, Mr. Lock. The former fear was realised, as will be seen when I come to note the cut flowers; the latter happily was not so. Mr. Cleave's nephew, I believe, has succeeded him, and intends to keep up the well-known fame of his garden. As is now the case at Taunton the arrangements of the Show were all that could be desired, and everything was done to make it agreeable to all concerned—exhibitors, Judges and visitors. The Committee worked with a will, and the indefatigable Secretaries were ubiquitous.

Stove and Greenhouse Plants.—These form a grand feature at the Taunton Show, and when such giants in plant culture as Mr. James Cypher of Cheltenham and Mr. Lock put forth their powers we may be quite sure that a fine display will be made. There are other exhibitors, but these are the giants. In the open class Mr. Cypher came first with a magnificent twelve. In these, of course, were some well known plants, which year after year seem to increase in size and in wealth of bloom, just caught to the very day that they are required. Kalosanthes coccinea, one of the best bloomed plants of the plant known in our younger days as Crassula coccinea, Ixora Pilgrimi, Erica Thompsoni, Clerodendron Balfourianum, Allamanda grandiflora, Statice profusa, Phœnocoma prolifera Barnesi, Bougainvillea glabra, Erica Irbyana, Erica Marnockiana, and Erica ampullacea Barnesi. In Mr. Cleave's collection (which in no case had names attached to them) were Allamanda Hendersoni, Bougainvillea glabra, Stephanotis floribunda, Phœnocoma prolifera, Clerodendron Balfourianum, Statice Horsfieldi. In the class for six stove and greenhouse plants the same exhibitors occupied the same positions. Mr. Cypher had smaller plants than those in the twelve class, but beautifully bloomed examples of Statice profusa, Allamanda nobilis, Bougainvillea glabra, Erica ferruginea superba, Clerodendron Balfourianum, and Erica æmula. In the class for foliage plants the order was reversed, Mr. Cleave taking first with grand specimens of Kentia australis, Kentia Fosteriana, Cycas circinalis, Encephalartos villosa, Croton Warreni, Croton Williamsi, Croton Johannis, and Dasylirion. Mr. Cypher was second with Kentia Canterburyana, Latania borbonica, Kentia australis, Cycas revoluta, Croton Thomsoni, and Croton angustifolius. Orchids are always strongly shown at Taunton, and all Orchid growers know that it is about the dead season for them. Mr. Cypher had a good four, consisting of Cattleya Gaskelliana, Saccolabium Blumei, Cypripedium Stonei, and Cattleya crispa superba.

In the amateurs' division Mr. W. B. Cleave swept all before him, but as his plants were not named I am unable to give them; they, however, were mostly reproductions of those exhibited in the open class. Mrs. Pearce exhibited well, and her free-flowering plants were good examples of superior cultivation. Indeed I do not think that I have ever seen a plant of Lapageria rosea so well done as that exhibited in this case. It was small as compared with many others I have seen exhibited, but it was one mass of flower, and the flowers were large and highly coloured. Her other plants were Erica obbata, Clerodendron Balfourianum, and Allamanda nobilis. John Marshall, Esq., of Belmont, was a good second, but his plants were not fully in flower; there were beautiful plants of the Peristeria elata, Clerodendron Balfourianum, Allamanda grandiflora, and an Ixora. The class which has been lately instituted for a group of plants staged for effect brought some interesting collections together, but I do not think that there was anything very suggestive in them.

Pelargoniums are always a strong feature in the Taunton Show, indeed somewhat too strong, for as far as I know it is the only place where the Golden and Silver Tricolors are assigned a place. These classes have been considerably reduced. Nosegays used to be a separate class, and Gold and Silver Tricolors had each a class, but now the Nosegays are placed with the Zonals, and the two classes of tricolors brought together, as a prelude let us hope to their disestablishment. As usual Mr. Godding carried off the first honours in the open division, while Mr. Hellard did the same in the amateurs' division. Mr. Godding's flowers comprised in the Zonal and Nosegay class, Indian Yellow, Henri Jacoby, Lizzie Early, Pioneer, White Clipper, Lord Gifford, and Bonfire; while Mr. Hellard's first prize in the amateurs' division consisted of beautifully bloomed plants of Matilda, Meteor, Lotus, Lady Sheffield, Laura Stratton, and Louisa Smith. His doubles were also fine plants; they were Mr. Buckler, Wonderful, Henri Brunner, and Marie Lemoine.

Some good plants of Lilies were exhibited by W. Newton, Esq., Barton Grange. Mr. Drummond obtained first prize for Odontoglossum Harryanum. Mr. Godding's Begonias were very fine, indeed it would hardly be possible to conceive better flowered plants: they were Torey Laing, orange; Beauty of St. Albans, red; The Queen, white; Wonderful, semi-double; Lady Mary, scarlet; Leviathan, red; and Floribunda. Fuchsias were hardly as good as usual; the same may be said of Cockscombs, Petunias, Balsams, &c.

Cut Flowers.—It was here, as might undoubtedly be expected, that the effects of the season, its backwardness and coldness, would be most evident. I have always looked forward to seeing a grand stage of Mr. Kelway's Gladioli, but I met a friend the day before who told me that he had been over his grounds and that on all his twenty acres there was hardly a flower to be seen. Dahlias I know, too, must be very late, and I feared other cut flowers would be dirty and indifferent in character, and so it was. There was, with the exception of Mr. Kelway's stand, not a Gladiolus in the Show worth looking at, while, instead of the long bank which Mr. Kelway is in the habit of putting up, there was but a small stand of twenty-four, but, of course, these were worth lingering over. Amongst them were three, to which certificates were awarded—viz., Orbit, a brilliant scarlet flower with white centre; Faust, surely wrongly named, a delicate soft pink; and Regalia, a crimson pink with white centre; these were all fine flowers and formed a handsome spike, the first named being a particularly brilliant flower. Certificates were also awarded to Messrs. R. Veitch & Son for some yellow ground Carnations exhibited in their fine group—Dorothy, Annie Chambers, Annie Douglas, and Alina. Dahlias were very inferior, both in quality and quantity. One missed the fine collection of Dahlia blooms from Keynes, Williams and Co. of Salisbury. Asters were exhibited in better condition than I had anticipated, but I was somewhat disappointed that Roses were not more largely shown, for in the open division there were but two exhibitors, Dr. Budd and Messrs. Cooling & Son, and in the amateurs' division Dr. Budd and Mr. Hobbs of Bristol. One missed Messrs. Keynes, Mattock, and others who are wont to exhibit here, and I suppose that the very unpleasant season must have been the cause of their non-appearance. Dr. Budd fully sustained his reputation as a first-rate rosarian, and amongst his blooms were to be found fine blossoms of Duchess of Bedford, François Michelon, Ulrich Brunner, Alfred Dumesnil, Marquise de Castellane, Jean Ducher, Comtesse d'Oxford, Alfred Colomb, Mons. Noman, Jean Liabaud, Alba rosea, Abel Carriere, Madame Charles Crapelet, Hon. Edith Gifford, Madame Gabriel Luizet, Marie Verdier, Innocente Pirola, Comtesse de Nadaillac, Louis Corbie, Dinge Conard, Comtesse de Serenye, Rubens, Souvenir d'Elise, Baroness Rothschild. Messrs. Cooling had also fine stands, in which were good examples of A. K. Williams, Alfred Colomb, Baroness Rothschild, and many other well known varieties. There were some excellent boxes of cut blooms of Pelargoniums exhibited by Mr. Collard and Mr. Wellard, and as these were grown under glass they were not influenced by the weather as the other cut flowers were, nor would it do to pass by without notice the beautiful box of cut blooms of stove and greenhouse plants exhibited by John Marshall, Esq., of Belmont, they were very fresh and brilliant in colour.

Table Decorations.—These have always been much encouraged at Taunton, and on this occasion four tables arranged for dinner were set up. The judging of these is a most difficult matter, and if not a thorny subject is a very "pinny" one, for shoals of ladies are quite ready to do anything to the Judges, whose decisions are always the subject of the most contemptuous remarks. When I have to judge these I

generally "make tracks" before the ladies come in. It is cowardly, no doubt; but then, I am of that very sensitive nature that a lady's adverse criticism crushes me. However, it is no laughing matter, and there is this knotty question to be decided—The fashions in these things change, and are we to decide as to which is the best table according to the prevailing fashion, or the best according to our ideas of what the true canons of taste are? Now, on this occasion there were tables arranged according to the present fashion, with satin down the centre, and flowers arranged in low receptacles on it; and others, like that of Mr. Cleave, arranged with the three upright stands in the centre of the table, most elegantly and gracefully arranged. I have no doubt the lady who put up the former was "down upon" the Judges pretty hard, and it is a moot point. If judgment is to be according to fashion this no doubt would be correct; but I rather incline to the view that we have nothing to do with fashion, but with what we consider to be good taste; although I am perfectly aware no judgment will alter fashion, and that you might as well expect ladies nowadays to wear pork pies instead of the lofty towers they place upon their heads now, as to alter what they have graciously pleased to decree shall be the fashion. There were some very handsome bouquets exhibited, and although one might very well take exception to their size, yet here again fashion carries the day, and perhaps had there been any moderate sized ones exhibited they would have been placed before these huge and unwieldy things. Some pretty stands of wild flowers were also shown.

I can say nothing as to the fruit and vegetables, for I had not even time to go into the tents where they were exhibited; but I have no doubt other correspondents will supply this. I have attempted to give a general view of the floral departments, but to have done this as it deserved would have required a much larger space than you can afford to give.—D., *Deal*.

FRUIT.—A better collection was staged than anticipated, the only appreciable falling off being in the hardy fruit classes. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, was first for a collection of ten dishes, having good stands of fairly well coloured Madresfield Court and Buckland Sweetwater Grapes, a fine Smooth Cayenne Pine Apple, Scarlet Invincible Melon, Exquisite Peaches, Pine Apple Nectarines, Black Tartarian Cherries, Negro Largo Figs, Moorpark Apricots, and Jargonelle Pears, all of good size and well ripened. Mr. Iggulden, gardener to the Earl of Cork, staged a collection similar to that he had at Weston-super-Mare two days previously, and it was questionable if he received justice at the hands of the Judges. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, was third, the Grapes in this collection being very fine. Mr. W. Daffurn, gardener to Donald Cox, Esq., was placed first for four dishes of fruit, these consisting of fairly good Madresfield Court Grapes, Blenheim Orange Melon, Noblesse Peaches, Elruge Nectarine. Mr. Pratt was second, and ought to have been first. The third prize went to Mr. Crossman, gardener to J. Brutton, Esq., for a creditable lot, and another very pretty lot was left out in an unaccountable manner. The class for Black Hamburgh Grapes was a fairly good one. Mr. Pratt was well first with bunches and berries of good size and colour. Mr. Iggulden was second with large and rather overripe bunches, and Mr. G. Cooper, gardener to C. L. Collard, Esq., third with fine compact bunches. In the class for Muscat of Alexandria Mr. Ward was first, his bunches being well coloured but stale. Mr. Pratt was second with much finer bunches, which, however, were not well coloured, and Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., a good third. The first prize in the class for for any variety of black Grapes, Mr. W. Daffurn was placed first for Madresfield Court, large but not well finished, Mr. Ward being second with Gros Maroc beautifully finished, the third prize going to Mr. J. H. Virgo for loose examples of Madresfield Court. The strongest competition was with any white variety of Grapes, the first prize going to Mr. J. Webber, gardener G. F. Zuttrell, Esq., who had large but rather green Buckland Sweetwater. The second prize was awarded to Mr. J. Lloyd for perfect Foster's Seedling, which ought certainly to have been first. Mr. Cooper was third with fine but scarcely ripe bunches of Foster's Seedling. Melons were not largely shown, but the quality of the winning fruit was decidedly good. Mr. Crossman was first with a fine fruit, Hero of Lockinge, Mr. Ward second with the same variety, and Mr. Iggulden third with Golden Gem scarcely ripe. Mr. Iggulden was placed first for a highly coloured dish of Sea Eagle Peaches, Mr. Daffurn being second with a handsome dish of Grosse Mignonne. The last named was first with a handsome dish of Elruge Nectarine, and Mr. Crossman second with the same variety. The best Apricots were staged by Mr. R. Huxtable, gardener to F. W. Newton, Esq.; Mr. E. Bradbeer being a good second. Mr. C. Lucas had the finest dish of Pears, staging good Jargonelle, and Mr. Daffurn was second with the same variety. Plums were fairly plentiful and good, and Cherries were very fine. Apples were plentiful, the culinary varieties being very fine. Other hardy fruits were less numerous, but the quality was good.

A remarkably fine number of vegetables were shown both by professional gardeners and cottagers. Messrs. Webb & Sons offered prizes for six varieties, and with these Mr. G. Garraway was first, Stourbridge Marrow Peas being very good. Mr. H. Moore was a good second, and Mr. T. Tilley, gardener, to Mrs. Cotgrave, third. In another similar class the prizes were provided by Messrs. Sutton & Sons, and in this instance Mr. T. Tilley was first, Sulham Prize Celery, Sutton's Seedling Potato being especially good in this collection. Mr. G. Rieks was second and Mr. H. Moore third. The competition in both classes was keen. The Society offered good prizes for ten varieties of vegetables, and with these Mr. T. Evry, Bath, was first, among these being very fine Webb's Chancellor Peas, Trophy Tomatoes, Duke of Albany Peas, Wright's Grove White Celery, and Snowball Turnips. Mr. J. Webber was a very good second, Sutton's Seedling Potato, Telephone Peas, Hackwood Park Potatoes being very good in this collection. Potatoes as usual were very plentiful and good. The best six varieties were shown by Mr. H. W. Ward, who had very handsome dishes of Schoolmaster, International Kidney, Prizetaker, Blanchard, Woodstock Kidney, and Vicar of Laleham. Mr. J. H. Virgo was second. Mr. Webber was first for a round variety, and Mr. Ward second, both having Reading Russet good. In the class for kidney varieties Mr. Webber was first for a grand dish of Sutton's Seedling, and Mr. Virgo second with the same variety. A variety of other vegetables were also largely and well shown in the various classes provided for them. Cucumbers as a rule were too large. Mr. Webber was first with a fine brace of Carter's Model and Mr. Crossman second. Ten good dishes of Tomatoes were shown, Mr. W. Iggulden taking the first prize for Carter's Perfection, large and handsome, the second prize going to Mr. J. Lloyd for Hackwood Park in good condition. Mr. W. J. Durk, gardener to H. J. Penny, Esq., was first for a basket of salad, Mr. Rieks being second. The last-named was first for a collection of Gourds.

MAIDENHEAD.

IN somewhat gloomy but fortunately dry weather the Maidenhead Horticultural Society held its annual Show on Thursday last in the grounds of Ray Lodge, kindly lent for the occasion. It proved a decided success. Specimen plants, groups for effect, and also fruit and vegetables were well shown. Several groups of plants and extensive collections of cut flowers contributed, not for competition, helped in a large measure to make a most successful exhibition. Specimen plants.—For six stove and greenhouse plants, half to be in flower, three exhibitors entered, the first prize going to Mr. J. F. Mould, nurseryman, Pewsey, Wilts; second to Mr. Aitken, gardener to Mrs. Meeking, Richings Park, Slough; and third Mr. Thomas Manley, gardener to F. H. Holmes, Esq., West Hill House, Henley. Mr. Mould's best plants were Kentia Fosteriana, Cycas revoluta, and Allamanda Hendersoni, while Mr. Aitken had good Kentia australis, Croton Johannis, and Rondeletia speciosa. Mr. T. Lockie, gardener to G. O. Fitzgerald, Esq., Oakley Court, Windsor, had the best eighteen fine-foliage plants in 8-inch pots, excellent half specimens. Conspicuous were Crotons Weismanni and Queen Victoria, Kentia Fosteriana, Bambusa variegata, and Asparagus plumosus. Mr. Griffiths, gardener to Col. Harvey, Springfield, Taplow, was second with smaller plants. For six stove and greenhouse Ferns Mr. Aitken was first with some good plants, especially so were Gymnogramma peruvianum argyrophyllum, Pteris serberula, and Goniophlebium subauriculatum; second Mr. T. Manley; third Mr. Hughes, gardener to H. F. de Paravicini, Esq., Heathfield, Braeknell. Several exhibitors competed in the class for a single specimen stove or greenhouse plant in flower, and here Mr. J. Haneh, gardener to J. P. Weatherby, Esq., Melworth Lodge, Cookham, was first with a large and well flowered Eucharis amazonica, Mr. Aitken second, and Mr. Griffiths third. For a single foliage plant Mr. Aitken was first with a large Croton Queen Victoria, second Mr. Lockie, third Mr. Hughes. Mr. Lockie was first for six table plants, consisting of Pandanus Veitchi, Dracæna superba, Cocos Weddelliana, Geonoma gracilis, Croton Laingi, and Aralia Veitchi, a very good selection. Second Mr. Waite, gardener to Col. the Hon. W. Talbot, Glenhurst, Esher. Third Mr. Aitken. Six Fuchsias were shown in fair condition by Mr. Hopkins, gardener to J. W. Burrows, Esq., The Elms, Cookham. The other exhibits were very poor.

Mr. Goodman, gardener to C. Hammersley, Esq., Abney House, Bourne End, contributed the best six Tuberous Begonias, large, well-bloomed plants of old varieties. Mr. Hopkins a good second. For six Zonal Pelargoniums Mr. Aitken was first with some fine plants, 3 to 4 feet in diameter, and well flowered, Queen of the Whites, Dr. Orton, and F. V. Raspail among the best. Coleuses were staged in quantity, the best plants coming from Mr. Paxton, gardener to the Hon. C. S. Irby, Hitcham Grange, Taplow; second, Mr. Hopkins; third, Mr. G. Squeleh, Boyne Hill.

Groups for effect formed one of the leading features of the Show, and were much admired, especially so the first prize group contributed by Mr. Aitken. The plants were required to fill a space of 12 feet by 10 feet, on low staging. Mr. Aitken had for his central plant a handsome Cocos Weddelliana, the groundwork composed of Maidenhair Ferns with a mixture of nice Gloxinias. The groundwork was raised in the centre, covering the Cocos pot. Springing out of the groundwork he had highly coloured Crotons and Dracænas, Tuberoses, Gladiolus, Francoa ramosa, Eulalia latifolia var., Hyacinthus candicans, &c., and well finished at the sides with drooping Panicum, Ferns, and Caladium argyrites, the whole forming a beautiful and well-arranged group. Mr. G. Hiatt, florist, Slough, was second, also with well-arranged plants, but wanting in finish at the sides. Third, Mr. R. Owen, nurseryman, Castle Hill, Maidenhead. The smaller groups, 6 feet by 5 feet, were poor, and too much packed by all the exhibitors. Mr. Hughes was first, Mr. Griffiths second, Mr. Mould third.

Cut flowers were staged in quantity, Mr. Walker, nurseryman, Thame, had the best twelve Roses, all very good. Mr. Hughes second. Mr. Walker was also first for twelve Dahlias and the same number of Asters. Mr. Broughton obtained a first prize for a bridal bouquet, Mr. Hiatt being second. In a ladies' competition for three vases of flowers arranged for the table, Mrs. Spencer was first with a very pretty arrangement, and Mrs. King second.

Fruit.—In the leading class, that for six dishes, Mr. Aitken was first

with a Queen Pine, good Black Hamburgh Grapes, rather green Muscats, Pine Apple Nectarines and Royal George Peaches, and a small Melon. Mr. Goodman was a very good second with much better dishes of Peaches and Nectarines, a grand dish of Kirke's Plum, Victory of Bristol Melon, and fair black and white Grapes. For four dishes, Pines excluded, Mr. D. Paxton, gardener to the Hon. C. S. Irby, Hitcham Grange, Taplow was first, having in his collection very good Foster's Seedling Grapes; second, Mr. W. Woolford, gardener to J. Mackmeiken, Esq., Little Missenden Abbey, and for four varieties grown in the open air Mr. Aitken first and Mr. Goodman second, Mr. Hughes third. Three bunches of Black Hamburghs were shown in fine condition by Mr. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, who was first, Mr. Hopkins second, and Mr. Goodman third. Mr. Osman was also first for three bunches black, any other variety, second Mr. Waite, third Mr. Goodman, all showing Alicante. White Muscats were poorly shown, but in the succeeding class for any other variety the competition was good. Mr. Paxton had large and well-coloured Foster's Seedling, and was first, Mr. Osman second with the same variety, Mr. Hughes third. Mr. Goodman was first both for six Peaches and the same number of Nectarines, and Mr. Waite second. Apples and small fruits were well shown by several exhibitors.

Vegetables made an imposing display, being staged in large quantities; the quality throughout was also good. Messrs. Sutton & Sons, Reading, offered prizes for six varieties, for which there were eight competitors, all showing well. Mr. Waite succeeded in obtaining first place, having extra fine Sutton's Perfection Tomato, New Intermediate Carrots, and Satisfaction Potatoes. Mr. Lockie was a close second, Mr. Manley third, Mr. Woolford fourth. Mr. Waite also won the first prize for six varieties offered by Messrs. Webb & Sons, followed by Messrs. Lockie and Woolford. In a strong competition Mr. Lockie was first for six dishes of Potatoes, having Sutton's Seedling, Satisfaction, Prizetaker, Snowdrop, Reading Ruby, and Reading Russet. Mr. Hughes was a good second, Mr. Woolford third. Many prizes were offered for single dishes of vegetables, in which the competition was extremely keen and the produce excellent.

Miscellaneous contributions, not for competition, helped to make up a most successful Show. Messrs. Sutton & Sons sent a large collection of cut flowers, chiefly of annuals grown from their selected seed stocks. They also staged a group of Gloxinias, of a beautiful strain and distinct from many varieties in commerce. It is called their "Netted Strain." Those shown were heavily veined with white on a bright red ground. A first class certificate was awarded. Messrs. Veitch & Sons contributed eight boxes of excellent Roses from their Langley seed grounds. Finely represented were Senateur Vaisse, Merveille de Lyon, Marquise de Castellane, Heinrich Schultheis, A. K. Williams, La France, Eugène Furst, Fisher Holmes, Baroness Rothschild, Madame Victor Verdier, and Grace Darling. From Mr. Owen came a group of fine Tuberous Begonias, single and double, also two boxes of cut blooms, and bunches of Dahlias in variety, Pyrethrums, Chrysanthemums, &c. Mr. E. F. Such sent a collection of cut flowers in variety, Mr. Broughton a group of Liliums and Tuberoses in a setting of Maidenhair Ferns, and Mr. Burdett a group of Begonias and Zonal Pelargoniums. Mr. W. Clark, horticultural builder, Reading, exhibited specimens of his patent glazing, which the Judges highly commended.

A word of praise is due to Mr. O. King, the courteous Secretary, whose arrangements throughout were excellent.—C. H.

WESTON-SUPER-MARE.—August 14th.

Favoured with lovely weather, and a grand all-round display of plants, cut flowers, fruit, and vegetables, a great success was almost unavoidable. Never before has everything gone so smoothly at this popular Show, and the arrangements made by Mr. Frank F. Perrett, the excellent Secretary, assisted by a hardworking Committee, gave the greatest satisfaction to the exhibitors generally.

There were four entries in the principal class, that for twelve plants, eight to be in flower, the prizes for which were fifteen guineas, ten guineas, five guineas, and three guineas, and in this Mr. J. Cypher, Cheltenham, was well first; Mr. George Lock, gardener to W. B. Cleeve, Esq., Crediton, second; Mr. Wills, gardener to Mrs. Pearce, Southampton, third; and Mr. W. Brooks, Weston-super-Mare, fourth. Mr. Cypher had very fine specimens of Ericas Marnockiana, ampullacea, Barnesi, Thompsoni, and Irbyana, an immense Phœnocoma prolifera Barnesi, a good Bougainvillea glabra, Ixoras Reginæ and Pilgrimi, Kentias Fosteriana and australis, Cycas revoluta, and Cordyline indivisa, all in capital condition. Among Mr. Lock's plants were fine and beautifully coloured Crotons Johannis and Williamsi, an immense Latania borbonica, a good Cycas circinnalis, and well-flowered specimens of Allamanda Hendersoni, Erica Fairrieana, Clerodendron Balfourianum, and Erica Eweriana. Mr. Wills had a small but beautifully flowered Lapageria rosea and a good Erica obbata purpurea. Mr. Brooks, the local grower, also staged a few creditable plants. The best six flowering plants were staged by Mr. Cypher, and consisted of Bougainvillea glabra, Statice profusa, Erica æmula, Clerodendron Balfourianum, Allamanda nobilis, Kalosanthes coccinea, all in capital condition. Mr. Wills was second, his best being Eucharis amazonica. Mr. Lock was well first with four flowering plants, these consisting of Allamanda Hendersoni, Clerodendron Balfourianum, Stephanotis floribunda, and Erica Lindleyana, all fresh and good. Mr. C. Holland, gardener to W. Ash, Esq., Weston-super-Mare, was a creditable second, and Mr. W. Brooks third. Three competed in the class for a greenhouse flowering plant, Mr. Cypher being well first with a fine Erica ferruginea superba, and Mr. Lock second. Mr. Cypher was again first with a stove flowering plant, having a beautiful specimen of Allamanda grandiflora; Mr. Lock was a good second with Clerodendron Balfourianum.

In the class for six fine-foliaged plants Mr. Lock was well first, his group including wonderfully fine and well coloured Crotons Princess of Wales and Warreni, a good Dasylirion acrotrichum, Kentias Fosteriana and Belmoreana, and Cycas circinalis large and healthy. Mr. Cypher was a good second, and Mr. W. C. Drummond, Bath, third. The best four fine-foliaged plants were staged by Mr. Wills, Mr. James Lloyd, gardener to Vincent Stuckey, Esq., Langport, being a very creditable second, and Mr. W. Brooks third. Mr. Lock was well first for a single specimen, having a beautifully coloured Croton Chelsoni. Mr. Wills was second. The first prize for six Adiantums was awarded to Mr. C. Holland, A. farleyense and A. cardiochlæna being the most noteworthy among the collection. Mr. Wills was second, and Mr. W. Pain, Weston-super-Mare, third. Mr. Lock had the best four Adiantums; Mr. W. Brown, gardener to the Rev. W. W. Aldridge, Weston-super-Mare, being second, and Mr. H. Marshall, gardener to R. Cox, Esq., Weston-super-Mare, third. The prizewinners with hardy Ferns were Messrs. G. Lock, W. Brooks, and Mr. E. Wills and Mr. C. Holland, while the prizes for Lycopods were awarded to Messrs. E. Wills and G. Lock in the order named in each instance. Mr. J. Cypher was easily first for four Orchids, these consisting of Cattleya Gaskelliana, Cattleya crispa, Saccolabium Blumei, and Cypripedium Stonei, all fresh and well flowered. Mr. Wills was second, and Mr. W. Brooks third. The first prize for a new and rare plant was awarded to Mr. Cypher, who had Odontoglossum Harryanum carrying a spike of nine large and very beautiful flowers; Mr. Lock was second with Alocasia Sanderiana.

All the foregoing were staged in one large tent, a variety of Ferns and commoner plants, as well as a grand display of Roses and other cut flowers, being prettily arranged in a second roomy structure. Mr. Lock had eight grand Ferns, including Cibotium princeps, Marattia Cooperi, Davallia polyantha, Gleichenia speluncæ, and Nephrolepis davallioides furcans, and was awarded the first prize. Mr. W. Lewis, gardener to J. E. Cole, Esq., was a very creditable second, and Mr. W. Brooks a good third. With Gloxinias Mr. C. Holland was well first, and Mr. W. Lewis second. Mr. W. Brooks had a first for six well flowered trained Clematises, and Mr. W. Lewis was well first for four Achimenes. Mr. W. Lewis was also first for Cockscombs, and Mr. C. Holland second; while the first for six Liliums was well won by Mr. W. Brooks, the second prize going to H. B. Fffarrington, Esq. Mr. C. Holland was first for a light Fuchsia, and Mr. Brooks second, these positions being reversed in the class for a dark variety. Mr. W. Brown was first for four double Tuberous Begonias, and Mr. G. Adams second. The best four single Begonias were staged by Mr. C. Holland, and with six varieties Mr. G. Adams was first. Mr. Holland staged six very pretty Coleuses, and was first, the second prize going to Mr. W. Brookes. The last-named was first for Petunias, Mr. J. Dyer for tricolor Pelargoniums, Mr. Lewis for Balsams, and Mr. Sydney Birslee for Zonal Pelargoniums, the competition being keen in each instance.

A grand lot of Roses were shown, several noted growers being counted out. For twenty-four triplets Messrs. Perkins & Sons were well first, having Duke of Teck, A. K. Williams, Countess of Rosebery, A. Colomb, Marie Baumann, Louis Van Houtte, Henry W. Eaton (a doubtful sport from Senateur Vaisse), Charles Lefebvre, Devienne Lamy, Mdlle. Marie Rady, Horace Vernet, Maréchal Niel, and Eclair, very fine and fresh. Dr. S. P. Budd, Bath, was a fairly good second, Marie Baumann, A. K. Williams, Souvenir d'Elise Verdier, and Marie Van Houtte being among his best. Messrs. G. Cooling & Sons, Bath, followed very closely, their best being Marshal P. Wilder, Duc de Rohan, A. Colomb, and Lady Sheffield. The first prize for twelve Roses was well won by Messrs. Heath & Son, Cheltenham, their best being Countess of Rosebery, Niphetos, Annie Wood, La France, Duke of Edinburgh. Mr. T. Hobbs, Bristol, was second, and Mr. W. Smith, Bristol, third. Dr. Budd was well first for twelve Teas, among these being good Madame Lambard, Madame de Watteville, Comtesse de Nadaillac, The Bride, Anna Ollivier, Marie Van Houtte, and C Mermet. Messrs. Cooling and Sons were second, and Mr. J. Mattock third, both having several good blooms, and others past their best. Messrs. Heath & Sons were deservedly awarded the first prize for twenty-four Dahlias; among these the best were Buttercup, Prince Bismarck, J. Cocker, Statesman, Fanny Sturt, Mrs. Gladstone, John Wyatt, Harrison Weir. Mr. S. Hobbs was first for twelve Dahlias, and Mr. W. Brooks second. Single varieties were fairly good, but flagged badly. Mr. A. A. Walters, Bath, was first, and Mr. T. Evry second. Messrs. G. Cooling & Sons were well first for cut Verbenas, and Mr. Walters second. Messrs. Cooling & Sons were first for quilled Asters, and Mr. W. S. Jones, Bath, second; and with French Asters Mr. G. Garraway was first, and Mr. W. S. Jones second. Mr. R. Richards was well first for twelve varieties of choice cut flowers, and Mr. C. Holland second. Mr. W. Brooks was first for Zonal Pelargoniums, and Messrs. Cooling & Son second. Mr. J. Ashwell, gardener to J. B. Braine, Esq., was first for a vase of flowers and fruit, Mr. Brooks second, and Mr. F. Edwards third. Several very fine bouquets were staged, Messrs. Perkins & Sons, Coventry, being first, and Mr. W. Garaway, Clifton, second, both having very tastefully formed bouquets, in which Orchids largely predominated.

On the whole excellent samples of fruit was staged, and the vegetables generally were remarkably good. The best collection of eight dishes of fruit was shown by Mr. W. Iggulden, gardener to the Earl of Cork, who had a good Queen Pine Apple, Black Hamburgh and Muscat of Alexandria Grapes, the latter not well coloured, a handsome Golden

Gem Melon, very fine Sea Eagle Peaches, Florence Cherries, Brown Ischia Figs, and Lord Napier Nectarine. The second prize was awarded to Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, who had good Alicante and Muscat of Alexandria Grapes, and very fine Figs, Nectarines, and Peaches. The third prize was awarded to Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, his Muscats and Hamburgh Grapes being very fine. With four dishes Mr. A. Crossman, gardener to J. Brutton, Esq., Yeovil, who had fairly good Muscat of Alexandria Grapes, a good Hero of Lockinge Melon, handsome Pine Apple, Nectarines, and Bellegarde Peaches. The second prize was awarded to Mr. W. Daffurn, gardener to D. Cox, Esq., Elruge Nectarines being very pretty, while Mr. J. Lloyd was third, a faulty Melon spoiling his chance for a better position. Mr. Lock was deservedly first for a Pine Apple, staging a very fine Smooth Cayenne. Mr. Pratt was well first for Black Hamburgh Grapes, having fine well finished bunches. Mr. W. Carpenter, gardener to A. Cole, Esq., was second, and Mr. J. Loosemoore third. In the class for any other black variety Mr. Nash was first with beautifully clean and well finished Alicante. Mr. J. Lloyd being second with good Madresfield Court, and Mr. Daffurn third with the same variety. Mr. Pratt was awarded the first prize for Muscat of Alexandria, large in bunch and berry, but not ripe. Mr. W. Coates, gardener to Mrs. Miller, was a good second, and Mr. J. Lloyd third. The competition with any other white Grapes was good. Mr. J. Attwell, gardener to J. P. Brann, Esq., was first with well coloured Buckland Sweetwater, Mr. Iggulden being second with rather overripe Foster's Seedling, and Mr. F. Edwards third with the same variety. In the class for green-fleshed Melons Mr. Iggulden was first with a very fine fruit of Golden Gem, the second prize going to Mr. Pratt for a good fruit of Longleat Perfection. Mr. Iggulden was also first for a scarlet-fleshed variety, having Blenheim Orange in good condition ; Mr. Holland being second with Sutton's Scarlet Invincible. Peaches were not largely shown. Mr. Daffurn was first for very fine Grosse Mignonne, and Mr. Iggulden second with the same variety. Mr. Daffurn was also first for Nectarines with very handsome Elruge, Mr. Iggulden being second with Pine Apple. Mr. Iggulden was first for Figs and second for Apricots, the first prize in the latter class going to Mr. T. Pople. Some fine Cherries were shown. Mr. Nash was first and Mr. Iggulden second. Nine good dishes of Tomatoes were staged, Mr. Iggulden being well first with very large fruits of Carter's Perfection.

The best eight dishes of vegetables were staged by Mr. Evry, Bathampton, these including good Duke of Albany Potatoes, Wright's Grove White Celery, Telegraph Cucumbers, Carter's Champion Runner Beans, Dwarf Erfurt Cauliflowers, Trophy Tomatoes, and Duke of Albany Peas. Mr. G. Tilley, gardener to Colonel Cotgrave, was a good second, and Mr. G. Garraway third. Mr. J. Lloyd was first for a pretty brace of Tender and True Cucumbers, and Mr. Garraway second. Potatoes, Peas, Onions, and other vegetables were also well shown in the various classes provided for them. Special prizes were offered for six varieties of vegetables by the Messrs. Sutton & Sons, Reading, and also by Messrs. Webb and Sons. For the former Mr. T. W. Gedge was first, and Mrs. Cotgrave second. For Messrs. Webb's prizes capital vegetables were also shown. Mr. G. Garraway was first, Mr. T. W. Gedge second, and Mrs. Cotgrave third.

WELLS.—August 15th.

It is some years since a summer show has been held in Wells, and it is hoped the great success attending its resuscitation will lead to a second attempt being made. The Show was held in the historical and highly interesting grounds connected with Wells Palace, than which a better place could not well be found. Thanks to the active interest taken in the Exhibition by the Lord Bishop of Bath and Wells the attendance of fashionable visitors in the early part of the day was very good, while in the evening crowds of sightseers thronged the tents and grounds. Mr. Richard Harris was the Honorary Secretary, a staff of gentlemen rendering him good assistance on the Committee.

In the plant classes the best prizes were offered for a group of stove and greenhouse plants, the major portion to be in bloom. The first prize was well won by Mr. T. Wilkinson, gardener to C. C. Tudway, Esq., who had a very pretty arrangement in which a lot of well grown Campanula pyramidalis, both blue and white, good Anthuriums, Begonias, Palms, and Ferns were conspicuous, all being very tastefully grouped. Mr. G. Chislett, gardener to Mrs. Rees Mogg, Glastonbury, was second, his exhibit including several trained Vincas and other choice plants. The third prize was awarded to Mr. J. Golding, gardener to J. T. Hall, Esq , Gloxinias, Begonias, and Ferns predominating in this group. Mr. Chislett was first for Fuchsias, and Mr. W. Potter, gardener to A. Colson. Esq., second, and with Zonal Pelargoniums Mr. Potter was first and F. J. Clark, Esq., Street, second, both having creditable plants. Mr. E. Brown, gardener to C. Baily, Esq., Frome, was well first for six Ferns, the best of these being Adiantum farleyense, Adiantum cuneatum grandiceps, and Adiantum cuneatum. Mr. T. Wilkinson was a good second, and there were several creditable exhibits in this class.

Cut Roses were very fine, notably the first prize twenty-four distinct varieties, staged by Messrs. Keynes, Williams & Co. Among these were massive fresh blooms of Ulrich Brunner, Mrs. John Laing, Charles Lefebvre, Her Majesty, A. Dickens, A. Colomb, Marshal P. Wilder, Duchess of Bedford, Annie Wood, A. K. Williams, Comtesse de Nadaillac, Beauty of Waltham, Comtesse de Serenye, Marie Van Houtte, and Duke of Wellington. Messrs. G. Cooling & Sons, Bath, were second, their best being Marshal P. Wilder, Madame Margottin, Mrs. J. Laing, Madame Lambard, and Comtesse de Serenye. The third prize was awarded to Mr. W. Brown, Wells. Messrs. Keynes, Williams & Co. were also well first for twelve varieties, among these being perfect blooms of A. K. Williams, Mrs. John Laing, Marie Baumann, François Michelon, and Annie Wood. Messrs. Cooling & Sons were creditably second, and Mr. F. Lindsey third. Mr. F. Lindsey was first for twelve Dahlias, the best of these being Grand Sultan, Mrs. Langtry, Mrs. Gladstone, J. N. Keynes, and J. O'Brien. Mrs. Kettewell was second. Messrs. Cooling and Sons were first for twenty-four Asters, staging capital quilled varieties. Mr. J. Payne, gardener to the Lord Bishop of Bath and Wells, was a good second, and Mr. J. Thyer, gardener to H. Baily, Esq., third. Mr. E. Brown was first for twelve varieties of choice flowers ; Mr. T. Wilkinson second, and Mr. W. Potter third. Messrs. Brown & Sons, Wells, had some excellent cut hardy flowering shrubs. Still more attractive were the several stands of Tuberous Begonias sent by Mr. B. R. Davis, nurseryman, Yeovil. Among these were several very fine named doubles, many of which were raised by Mr. Davis, as well as numerous extra large flowered single varieties.

The greatest attraction appeared to be centred in the dinner tables laid for six persons and decorated with flowers and fruit. These were set out in one of the corridors connected with the Palace, and it was much regretted that no more than three competitors entered for the prizes. Mr. J. Payne was well first, his table being very light and pretty. A centre epergne and two very pretty side pieces were tastefully filled with Festuca glauca and other Grasses, among which were intermingled a few Eucharises, white Cornflowers, and other elegant flowers. The centre of the table was covered with a square of salmon-coloured plush figured with old gold. On this were laid dark crimson Roses and foliage, this effectively showing off single flowers of the Tulip Tree. Six tastefully filled specimen glasses and four good dishes of dessert completed a very perfect table. Master C. H. Hoare, who was second, relied principally upon the foliage and flowers of the large white climbing Convolvulus, and other white flowers, laid on the cloth, the effect in this case also being good. Mrs. L. George was third. Bouquets and vases were also well shown.

The display of fruit was not extensive. Mr. J. Cray was first for a collection of eight, among which were fairly good Black Hamburgh Grapes, Hero of Lockinge Melon, and Grosse Mignonne Peaches. Mr. Payne was a good second. Mr. Cray was first and Mr. Payne second in the class for black Grapes, both having highly creditable Black Hamburgh. Mr. Cray was also first for white Grapes with good Muscat of Alexandria, Mr. T. Wilkinson being second with the same variety. With Melons, Mr. Payne was first for a good fruit of Blenheim Orange, the second prize going to Mr. E. Stokes, gardener to N. McLean, Esq. Mr. Cray was first for Peaches, and there were a few competitors with Pears and other hardy fruit.

The best collection of vegetables was staged by Mr. Hall, Mr. J. Payne being a close second, and Mr. E. Brown third. Mr. Chislett was first for a brace of Cucumbers, Mr. Payne second, and Mr. F. Lindsey third.

READING.—August 15th.

The annual summer Show of the Reading Horticultural Society was held in the Abbey ruins, by permission of the Mayor and Corporation, on the above date. The site of the Show was a most picturesque one, a huge double marquee having been erected between the thick Ivy-covered walls of the ruined Abbey. Within, high banks along each side afforded an excellent position for specimen stove and greenhouse plants, Palms, Tree Ferns, and groups, while lower parallel and end mounds were utilised with admirable effect for such brilliant flowering plants as Fuchsias, Pelargoniums, Balsams, and Begonias. Fruit, bouquets, and buttonhole flowers were arranged on central tables, and the vegetables in competition for special prizes offered by leading seedsmen were staged in a smaller side tent. Generally considered the specimens and groups were good and effective, fruit moderate, vegetables magnificent. Potatoes were splendidly shown. Onions, Tomatoes, and Cauliflowers also very fine.

Plants and Groups.—In division 1, open to all, the leading class was that for nine stove and greenhouse plants, prizes of £5, £2 10s., and £1 being offered. The first prize fell to Mr. Mould of Pewsey, whose collection included well flowered specimens of Ericas Irbyana and retorta major, Dipladenia profusa, Ixora Dixiana, Phœnocoma prolifera Barnesi, and moderately good examples of Allamanda Hendersoni and Gloriosa superba. Mr. James of West Norwood had the next best group, but it was disqualified owing to his having overlooked the proviso in the schedule that two species or distinct varieties only of the same genus could be admitted, and having included three Ericas. A special prize was, however, awarded to him, fine examples of Ixora Fraseri, Dipladenia boliviensis, and fair examples of K. australis and Latania borbonica completing his collection. Mr. Howe, gardener to Sir R. Sutton, Benham, followed, his best plants being a fine Latania borbonica, Alocasia macrorbiza, and Anthurium crystalliuum. Mr. James took the remaining prize.

Mr. Dockerill, gardener to G. W. Palmer, Esq., Reading, won with six stove and greenhouse Ferns, the species best represented being Alsophila australis, very fine, Dicksonia antarctica, Nephrolepis exaltata, and Microlepia hirta cristata. The second prize fell to Mr. Howe, who had Dicksonia antarctica, Nephrolepis davallioides furcans, Platycerium alcicorne, and Gymnogramma chrysophylla in good condition ; the remaining

prize went to Mr. James. A fine, healthy, and well flowered specimen of Eriea obbata purpurea seeured the first prize for Mr. Mould in the elass for one stove or greenhouse plant in flower, Mr. Bright, gardener to J. Karslake, Esq., Whiteknights, being second with the Hon. Mrs. Hay Fuchsia. The two prizes for specimen new or rare plants went to Messrs. Woolford (gardener to A. Palmer, Esq., Reading), and Doekerill. The former was first with Schubertia grandiflora bearing large pure white richly scented flowers, his opponent being represented by a neat plant of Dracæna Lindeni. Messrs. Best, gardener to C. W. Clute, Esq., Palmer and Waite, gardener to Col. tbe Hon. W. P. Talbot, Esher, were the prizewinners with table plants, those for Lycopodiums going to Messrs. Mayne (gardener to Lord Saye and Sele, Reading), and House, Southcote. These were small but very fresh and attractive. Greenhouse plants, such as Achimenes, Fuchias, Balsams, Cockscombs, Liliums, Coleuses, Palms, Pelargoniums, and Begonias formed a very attractive feature, and the principal prizewinners were Messrs. Balchin, B. Simonds (Reading), Howe, Best, Midwinter, Bright, Mayne, Booker, Woolford, Dockerill, House, Mayo, and Bowerman, gardener to C. House, Esq., Haekwood Park.

The groups were a decided improvement on last year, Mr. James in particular being represented by an arrangement at onee light, gay, and pleasing ; that of Mr. Phippen, of Reading, who followed, was also fairly effeetive, but a little heavy. Mr. Sumner, gardener to — Hounslow, Esq., of Reading, was tbird.

Cut Flowers.—The Phloxes, Dahlias, Roses, Zinnias, &e., made a highly attractive display. Mr. Walker of Thame was first with eighteen Dahlias, distinct varieties, and occupied a similar position in the elass for twelve, showing even, fresh, and well coloured blooms in each ease. The second prizes went to Messrs. Mortimer, nurserymen, Farnham, and Cheal & Sons, Crawley. The last named exbibitors were unopposed with single varieties, but their stand was a splendid one and would have held its own in the severest eompetition. Roses were best shown by Messrs. Perkins of Coventry, who were first in both classes, minor prizes falling to Messrs. Cheal and Walker. Hollyhocks were passed over as not being sufficiently distinct, and the Judges recommended that in future nine varieties only instead of eighteen should be asked for. With Phloxes, Asters, Gladioli, double Zinnias, bunches of eut flowers, bouquets, and buttonholes the chief prizewinners were Messrs. Walker, Phippen, Midwinter, Woolford, House, Mould, Turton (gardener to J. Hargreaves, Esq.), Tranter of Henley, Durman (gardener to T. W. Workman, Esq., Reading), Balchin, Such, Maidenhead, and Booker. Mr. Turner of Slough, exhibited a magnificent stand of yellow ground Pieotees, the varieties being Colonial Beauty, Almira, Dorothy, Agnes Chambers, Annie Dundas, and Terra Cotta, and the Judges reeommended the award of a certifieate of merit to each. Messrs. Oakshott & Millard, Reading, sbowed a collection of cut flowers, not for competition, and a splendid lot of cut Roses were staged by Messrs. Jas. Veitch & Sons, Chelsea, Messrs. Perkins also having a few stands.

Divisions 2 and 3 for amateurs and ladies comprised some interesting exhibits, but none whieb called for special eomment.

Fruit.—Neither in quantity nor quality could this section of the Exhibition be eonsidered equal to that of last year, traces of tbe adverse season being painfully apparent. There was but one exhibitor in the class for eight disbes, distinct kinds — viz., Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End. His Grapes Muscat of Alexandria and Black Hamburgh were but moderate, but the Nectarines and Peaches were very good. Plums (Kirke's) and Apricots (Hemskerk) were of fair quality, but the Figs (Brown Turkey) were modcrate. Mr. Maher, gardener to A. Waterhouse, Esq., Yattendon, was awarded the first prize for a collection of six, but there was no opposition. He showed Gros Colman and Foster's Seedling Grapes fairly well, Elruge Nectarine, Hero of Lockinge Melon, and Singleton Fig moderately, and a good dish of Morello Cherries. Black Hamburgh Grapes were best shown by Mr. Osman, gardener to J. Baker, Esq., Ottersbaw Park, the bunebes being of medium size, well ripened, and well coloured. Mr. Turton's second prize clusters were good in point of size, but unfinished ; Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, being a poor third. For a similar number of bunches of any otber black kind Mr. Osman was first with Alicante, well coloured, but the berries somewhat small ; Mr. Waite, second with Gros Maroc in fair condition ; and Mr. Maher, third with Madresfield Court. The last named was to the fore with white Muscats, the berries small, but well ripened. Mr. Ashby, gardener to Mrs. Fanning, Whitehurcb, was second, and Mr. Osman third, the bunebes in eacb case being of good size, but not well ripened. For any other white Grape Mr. Maher was once more to the front, showing Buckland Sweetwater, moderately good ; Messrs. Kneller and Turton following. Mr. Pounds, gardener to G. May, Esq., Caversham, was first with six Peaches, one variety ; he was represented by very fine well ripened fruits of Nectarine. Messrs. Waite and Mortimer were second and third. Mr. Goodman won with Nectarines, showing Lord Napier fairly, but the opposition was weak ; Mr. Bowerman was sceond, and Mr. Waite third. Apricots were unripe, and only the third prize was awarded, a poor disb of Moor Park winning tbis for Mr. Howe. The latter was the only exbibitor of Figs, and was placed first for Brown Turkey. With Plums Mr. Goodman won, his opponents being disqualified for duplicates. It was too early for Apples and Pears to be shown in anything like the proper condition. Messrs. Hinton, gardener to J. Leslie, Esq., Reading ; Turton, Howe, House, Goodman, and Read, gardener to F. Wilder, Esq., were the prizewinners. Mr. Goodman won with a collection of miscellaneous fruits, followed by Mr. Read. These deserve a word of eommendation, Mr. Goodman having a basket of about twelve kinds, all in good condition. Messrs. Sutton & Sons, Reading, offered four prizes for the best single specimens of either of their three Melons, Scarlet Invincible, Imperial Greenflesh, and Hero of Lockinge, but the last named variety represented the prizewinner in each case. Mr. Kneller was first ; Mr. Palmer, gardener to Hume Dick, Esq., Thames Ditton, second ; Mr. Maher, third ; and Mr. Hashim (gardener, Mr. G. Swettenham), Caleot, fourth.

Vegetables.—These were the finest featnre of the Show, some splendid produce being exhibited for prizes offered by several large seed firms. Messrs. Sutton & Sons offered five prizes for collections of vegetables, six distinct varieties, to include several of their specialities. Mr. Kneller won the first prize of £3 3s. witb a very fine lot, comprising Veitch's Autumn Giant Cauliflower, very fine indeed, Matchless Marrow Peas, Rousham Park Onion, Snowdrop Potatoes, New Intermediate Carrots, and Perfection Tomatoes. Mr. Waite showed Perfection Tomatoes, Satisfaction Potatoes, Duke of Albany Peas, and Intermediate Carrots of very high quality, and had a very close contest witb Mr. Kneller, but had to put up with second place ; Mr. Bowerman was third, also showing well ; Mr. Lye, gardener to W. H. Kingsmill, Esq., fourth ; and Mr. Pope, gardener to the Earl of Carnarvon, Higb Clere, fifth. Potatoes were splendidly shown, Mr. Pope being first for nine dishes (Sutton's), with Lady Truscott, Reading Russet, Early Regent, Early Border, First and Best, Satisfaction, Reading Ruby, Woodstock, and Prizetaker. Mr. Ilott, gardener to Major Allfrey, was a creditable second, the remaining prizes going to Messrs. Lye, Palmer, Read, and Springbett, Sulham. With seven specified varieties (Sutton's prizes), including several of those already named, Mr. Ilott was first, Messrs. Pope, Lye, and Read following.

Messrs. Carter & Co. offered prizes for the best nine dishes of vegetables grown from their seed. The first fell to Mr. Lye, who showed Standard Bearer Celery, Stratagem Peas, and Model Cucumber excellently amongst others. Mr. Beckett was second, and Mr. Waite third.

Mr. C. Fidler, Reading, offered prizes for collections of Potatoes and six distinct kinds of vegetables, Messrs. Pope, Beckett, and Lye being first, second, and third in the order named in each case.

Messrs. Webb & Sons, Wordsley, Stourbridge, offered prizes for the best collections of six distinct kinds, to include two of their varieties. Mr. Lye was first with a very fine lot, including Monster White Onion, Early Puritan Potato, and Chancellor Pea, very good indeed ; Mr. Waite was second, Stourbridge Glory Potato, Kinver Cauliflower being good ; Mr. Kneller was third, and Mr. Rye fourth.

Messrs. Oakshott and Millard's champion prize for the best dish of fruit in the Show was carried off by Mr. Goodman's exhibit, while the champion prize offered by the same firm for the best dish of vegetables was won by Mr. Chamberlain with Satisfaction Potato.

ST. ALBANS.

The above Society held its second annual summer Show on the 15th inst. The Exhibition was in itself a success, and showed a marked improvement on that held last year. The improvement was specially noticeable in the cottagers' division. From some parts of the Society's district vegetables were sent which would well have held their own on any exhibition table. There is also a marked improvement in the general cultivation of the allotments, while the interest the various holders of allotments take in the Society is plainly shown by the fact that eighty-four entries were sent in for prizes offered by the Society for the best kept and cultivated allotments. Including the entries for allotments there was something like 900 entries for the Show itself. This must be very gratifying to the promoters, and also to the very energetic Hon. Sec., Mr. W. F. Emptage. Last year the Society had to depend to a great extent upon non-competitive exhibits, the funds not permitting an open class, or a class in which gentlemen's gardeners could exhibit. This season, however, they were enabled to offer several prizes open, the result being that there was a fair competition amongst the gardeners of the neighbourhood. Owing, no doubt, to the very backward season fruit was not well represented, the most prominent exhibits being the Muscat of Alexandria Grapes from Mr. Nutting, gardener to J. B. Maple, Esq., M.P. ; Black Hamburghs by Mr. Faint, Maiden Hill, Hertford ; Peaches and Melon shown by Mr. Nutting. Exotic Ferns were well shown by Mr. Emptage, gardener to J. S. Hill Esq., Hawkswick, St. Albans, and by Mr. Nutting. The exhibits in this class were exceedingly close, each lot finding a deal of favour with the visitors. The Judges, however, placed the Hawkswick collection first. In the six foliage plants the decisions were reversed, Mr. Nutting being a good first. The same exhibitor was also well to the fore with twelve table plants, being an easy first. Mr. Nutting also secured the first for four stove and greenhouse plants in bloom. In the competition for groups for effect there were four entries. Mr. Shaw, gardener to Rokeby Price, Esq., Clementhorpe, St. Albans, was placed first, Mr. Emptage second, Mr. Nutting third. None of the groups call for any remarks, the first and second being huge closely packed banks of plants, while that from Mr. Nutting showed a want of finish.

Vegetables were well shown by Mr. Faint, Mr. Pepper, gardener to G. Burnand, Esq., Tewin Water, Welwyn, and Mr. Reynolds, gardener to — Green, Esq., Oaklands, St. Albans. Mr. Pepper also secured Messrs. Cutbush's prize for Mushrooms. In the amateurs' classes the exhibits were highly creditable, while, as before stated, the cottagers' exhibits were exceptionally good. Messrs. W. Paul & Son, Waltham Cross, staged some fine Roses in their well known effective style. Messrs. Cutbush & Sons had a fine group of plants, in which were some good plants of hardwooded Heaths. They also staged several good boxes of

Roses. Messrs. Watson, New Zealand Nurseries exhibited some exceedingly fine single Begonias. Mr. Spriggins also assisted with a good display of Roses and plants; and Messrs. Wood & Son, Wood Green, showed samples of their various specialties.

SUTTON (SURREY).

The Sutton and Cheam Horticultural Society held their twenty-fifth annual Show on the 15th inst. in the charming grounds of H. L. Antrobus, Esq., at Lower Cheam House. There was a large attendance of visitors; the weather being all that could be desired induced many from Croydon and the surrounding district to visit one of the best shows this Society has yet had. The well kept pleasure grounds, kitchen gardens, and the houses, which are under the able management of Mr. T. Knowles, the gardener, were open to all who cared to "look round," and hundreds availed themselves of the opportunity, proving how much the kindness of Mr. and Mrs. Antrobus was appreciated. Mr. W. King, gardener to Philip Crowley, Esq., Waddon House, Croydon, was to the front again in the class for twelve stove and greenhouse plants, having fresh and admirable grown specimens of Dracæna Lindeni, 10 feet high, furnished with leaves to the pot; Alocasia macrorhiza variegata, 10 feet through; Anthurium crystallinum, 6½ feet through; and Anthurium Andreanum, with fifteen spathes; his other plants being among the best to be seen near the metropolis. Mr. T. N. Penfold, gardener to Canon Bridges, Beddington House, was a good second, his foliage plants being large and healthy, but the flowering ones were not so good as usually shown by him, excepting Statice profusa, which was well bloomed. For a specimen plant in bloom, Mr. King was again first with a magnificent Clerodendron Balfourianum, loaded with bloom. The same exhibitor was first for six exotic Ferns, Davallia fijiensis plumosa, D. polyantha, Asplenium Nidus-Avis, and Woodwardia radicans, all large and well-matched plants; G. Smith, gardener to G. Ormc, Esq., and Mr. J. Acock, gardener to G. A. Bacon, Esq., following with smaller plants. Mr. King always shows Selaginellas in remarkable condition, and for six of these he was deservedly placed first, and Mr. Smith second. Mr. S. Broughton, gardener to W. F. Hughes, Esq., Sutton, took all the leading prizes for Fuchsias, Balsams, Cockscombs, and Gloxinias; he was also a successful exhibitor in the classes provided for local gardeners only.

The greatest attractions were the groups of plants arranged for effect, Mr. King taking first honours with a light and graceful arrangement. Several Cattleya Gaskelliana were peeping out of the ground-work of Maidenhair, and at the back stood a large plant of Dracæna Lindeni, bearing a flower spike 2 feet in length. Mr. T. A. Glover, gardener to E. Ellis, Esq., Manor House, Wallington, was a close second. In the centre was a finely flowered Oncidium Lanceanum, O. crispum, and Odontoglossum Alexandræ, with some choice Begonias, were conspicuous. In another class, from which nurserymen were excluded, G. Flemwell, Esq., Sutton, was the only exhibitor, but he merited the award of the first prize, and was doubtless disappointed to find he had no competitors to defeat.

The principal prizetakers for cut flowers were Mr. W. Slade, gardener to G. Foster, Esq.; Mr. A. Carter, gardener to Alderman Evans, Ewell, for herbaceous cut flowers, the latter being first again for both Asters and Dahlias. Mr. King and Mr. Penfold had the best two collections of twenty-four varieties of cut blooms. Several boxes of Roses were staged, Messrs. Broughton and Penfold taking the lead with blooms of good quality, considering the lateness of the season.

Fruit was not so good as generally shown here, but the Peaches from Mr. Carter and the Nectarines from Mr. G. Smith were large and well coloured. Vegetables were well represented, Mr. Osman, from the South Metropolitan District Schools, showing in his usual good style, followed by Mr. Blurton, gardener to H. Cosmo Bonsor, Esq., M.P., and Mr. Spinks. The amateurs and cottagers were in good force, especially the latter, as their productions were plentiful and good, which rendered the smaller tent an important part of the Exhibition.

Several nurserymen and others assisted with plants and flowers to make the Show a success. Messrs. J. Laing & Sons, Forest Hill, had a tastefully arranged group containing bright flowering Begonias, &c., a telling plant being their new white Anthurium Laingi. Seedling Hollyhocks of merit and Roses, including good blooms of Mrs. J. Laing, Alfred Colomb, and Her Majesty. Mr. J. Appleby, Dorking, had also good boxes of Roses, as had Mr. J. Peed, Roupell Park Nursery; good blooms of A. K. Williams, Captain Christy, Pride of Waltham, and White Baroness were the best. From Messrs. Thompson & Son, Wimbledon, came a choice assortment of 100 bunches of hardy and herbaceous flowers, including Iceland Poppies, Geum coccineum, Chelones, Harpalium, Gaillardias, Potentillas, and Phlox; this exhibit was much admired. Mr. J. Box, Croydon, had a capital group of plants, his named and seedling Begonias being large and showy; he also had a collection of Turner's new Carnations and Picotees. Mr. T. Butcher, Croydon, exhibited a fine lot of Shirley Poppies in variety of colour. Messsr. Cheal & Sons, Crawley, and Mr. E. Morse, Epsom, both showed well, the former having some grand boxes of Dahlias. From the gardens of the Right Hon. G. Cubitt came ripe fruit and foliage of Monstera deliciosa. Six large well coloured bunches of Black Hamburgh Grapes came from Mr. Beckett, gardener to T. R. Bryant, Esq., Juniper Hall. To Mr. J. Flemwell (Chairman of the Committee) and Mr. W. R. Church (the Secretary) much credit is due, and each year these gentlemen appear to be taking more interest in and working harder for the benefit of the Society. Money boxes were placed in the tents by the local secretary of the Gardeners' Orphan Fund, and many gave their mites.

TAVISTOCK.

It is forty years since the Tavistock Cottage Garden Society came into existence. Its first exhibition and several subsequent ones were held in the assembly rooms of the "Bedford Hotel;" a move was afterwards made to the Corn Market, until the show grew to such proportions that the market hall was not too large for the display of its wealth of flowers, fruit, and vegetables. Under the supervision of Messrs. H. Spry, E. Cornelius, T. Palmer, H. Blatchford, and S. J. C. Blanchard the building was tastefully and skilfully embellished. From the ceiling gay banners and moss-covered baskets of Ferns depended, and the arcades were decorated with evergreens, which were studded with rosettes and surmounted with flags; a fountain, as usual, played in the centre of the building. There was a falling off in the number of exhibits from the conservatories of gentlemen residing in the neighbourhood, only four being represented—namely, Mr. D. Radford, of Mount Tavy; Mr. F. Bradshaw, of Lifton Park; Mr. E. Marshall, of Parkwood House, who is the President for the year; and Mr. Tarner, of Morfe Lodge, Tavistock. The florists who had stands were Mr. Yole, of the Tavistock Nursery; Messrs. Lucombe, Pince & Co., of the Exeter Nursery; Messrs. Hender & Son of Plymouth; Mr. Williams of Compton, Messrs. Dingle of Saltash, and Messrs. Curtis, Sanford & Co., of the Devon Roseries, Torquay. The flowering plants made a magnificent display, and there was a decided improvement in the way in which some of them were arranged. The fruit department showed a slight falling off, and there was a marked diminution in the number of cut flower exhibits. This was no doubt largely attributable to the unfavourable season, but it has also been suggested that the money prizes are not large enough in amount to induce hearty competition, and it may be well for the Committee to consider the advisability of giving larger sums next year. The vegetables were a splendid collection, and the quality of the baskets of mixed vegetables were so high that the Judges experienced great difficulty in awarding the prizes. The stand containing the floral exhibits of Mr. F. Bradshaw, of Lifton Park (gardener, Mr. G. H. Mounsdon), occupied its old position at the further end of the building. The arrangement of the stand was remarkable for the judicious admixture of flowers with Ferns, and the whole of the specimens were well grown. The Achimenes were the best in the Show, also Plumbago capensis. A choice show of Begonias, Adiantums in varieties, and Coleuses were also particularly noticeable. On one of the central stalls stood the principal part of the collection of Mr. E. Marshall, of Parkwood (gardener, Mr. C. Chanter). It was an excellent stall of plants, comprising Begonias, ornamental foliage plants, Ferns, and Geraniums. The stands, however, appeared at a disadvantage on account of the limited space at the command of the gardener for effective arrangement. A supplementary stall at the side of the main one contained a beautiful collection of seedling Gloxinias. The exhibits on the stands of Mr. D. Radford of Mount Tavy (gardener, Mr. Lowday), were of great merit, and the grouping was excellent, but had the staging been carried higher its contents would have been shown to greater advantage. Its speciality consisted of a number of well-grown ornamental foliage plants. A very fine Adiantum farleyense was especially worthy of notice, as were also some well-grown specimens of Geraniums, Colosias, Achimenes, Fuchsias, and Cockscombs. Mr. Tarner, of Morfe Lodge, Tavistock, also exhibited a stall of well-grown plants, consisting principally of Begonias and Ferns.

The largest and most attractive display sent by florists was that of Messrs. Lucombe, Pince & Co., of the Exeter Nursery. It contained some fine Palms, Ericas, Allamandas, and Dipladenias; also some excellent Orchids, including the Cattleya crispa, the Cypripedium Lawrencianum. Among the ornamental foliage plants was the Alocasia Sanderiana, and the cut blooms embraced choice Carnations, Picotees, a box of Phloxes, and another of Roses, among the mixed herbaceous plants being a specimen of the new Gaillardia maxima, and also Wahlenbergia grandiflora alba. The exhibits of Mr. E. Yole of the Tavistock Nursery included some particularly fine Dahlias in twenty-four distinct varieties, Carnations, Marigolds, Antirrhinums, and the finest collection of Begonias in the Show, the flowers and foliage being remarkably well developed. They were in fourteen distinct colours, including pure white, orange scarlet, dark pink, and salmon, the whole being tastefully bordered with Ferns. Messrs. Curtis, Sanford & Co. of the Devon Roseries, Torquay, were represented by magnificent specimens of the best varieties of the "queen of flowers." Their Dahlias were also very fine. Messrs. J. Dingle & Son, of St. Stephens, by Saltash, showed a good collection of Petunias, Carnations, Pelargoniums, Verbenas, Pansies, Dahlias, Roses, Ahutilons, Pentstemons, and Gaillardias. The stand of Messrs. Hender & Sons, of the Mannamead Nurseries, Plymouth, was remarkable for its rich variety of Petunias; they also showed some good specimens of Pampas Grass. Mr. J. R. Williams of the Compton Nursery, Plymouth, exhibited a model fernery, suitable for a fire-screen. It had reflectors at certain angles, each of which reflected the plants placed in the fernery, producing a very charming effect. He showed a plant of Amorphophallus Rivieri, and his other specimens included a Japanese Poppy (the Mikado), Fuchsias, and Coleuses. Messrs. Monk and Waldron were the only exhibitors who sent plants for competition, which were well grown. The cut flowers most worthy of mention were the Pompon Dahlias, the Pelargoniums, the Asters, the Marigolds, and the Roses.

Turning to the vegetables, as we have already stated they were of an exceptionally good quality. The number of dishes and plates of Potatoes was larger than last year, and no one would think, judging from the excellence of the specimens in the Exhibition, that the season had

been such a disastrous one. The Cos Lettuces and the Scarlet Runners were of an indifferent description; of the last-named there were very few exhibits. The Carrots were fine. The Cauliflowers were the best that have been seen in a Tavistock exhibition for many years, and the Broad Beans were of extraordinary length, some measuring 15 inches. Of the baskets of vegetables we cannot speak too highly. They evoked the greatest admiration, and as the Judges found it a task of such difficulty to award the prizes, it must have been very satisfactory to them, and it could not fail to have inspired confidence in their decisions, when it was discovered on comparing results that W. Palmer, W. Thorne, and S. Miles, who took prizes in the order named for the best kept gardens were also recipients of the first and second prizes for baskets of vegetables, Messrs. Thorne and Miles being equal in this competition. In the fruit department three fine bunches of Grapes were exhibited by Mr. Marshall, and two bunches by Mr. D. Radford. Messrs. Dingle and Sons sent some exceptionally large Black Currants and Gooseberries. In the competitive classes the exhibits were of a creditable description. A large Melon was exhibited by Mr. W. H. Tuckett, of Mannamead, Plymouth, and three fine ones by General McArthur, of Brooklands, not for competition. Mr. R. B. E. Gill contributed £10 towards the prize list for the best kept cottages in the town and country, and there was plenty of competition. There were no exhibits of honey, although prizes were offered, but some excellent specimens of butter and cream were shown. The highly satisfactory manner in which the arrangements for the Show were carried out was in no small degree due to the untiring energy of the Secretary, Mr. H. E. Monk.—(*Tavistock Gazette.*)

CUCKFIELD COTTAGERS' SOCIETY.

This flourishing Society held its twenty-seventh annual Show on Wednesday, the 15th inst., in the vicarage field. This is simply a cottagers' Society, including the districts of Haywards Heath and Staplefield, the parishes of Balcombe, Bolney, and Slaugham, and is chiefly supported by the liberal donations of the resident ladies and gentlemen of those parishes, whose subscriptions amount to something like £70 or £80 annually. The Committee is composed of representative gardeners from each parish and tradesmen and others of the town of Cuckfield. Cuckfield cottagers have always been noted for their vegetables, and the present occasion was no exception of the rule. There were eighty exhibitors came forward, and the entries were 938, nearly 200 more than last year. Potatoes were well represented. In six classes there were 140 entries, which, with those entered for special prizes, made close upon 250 plates of splendid Potatoes. Broad Beans, Peas, Turnips, underground Onions, and Celery were very good. Runner Beans, Carrots, Parsnips, and spring-sown Onions were not so good as those produced last year on the "dry system." Small fruit was fairly well shown, but Apples and Pears were a poor lot. There is also an amateurs' class, but when the fruits, flowers, and vegetables shown by them are compared with those of the cottagers, one is obliged to come to the conclusion that the former would cut a poor figure in the prize list were the two sections amalgamated.

The centre stage in the cottagers' tent was filled with fine collections of plants kindly sent by R. A. Bevan, Esq., Horsgate (Geo. Stringer, gardener), who staged by far the best lot of plants, and they were as effectively arranged as they were well cultivated. W. Payne, Esq., Hatchlands (T. Burtinshaw, gardener); T. W. Erle, Esq., Mill Hall (H. Seutt, gardener); G. Knott, Esq., Knowle Lodge (W. Stovell, gardener); T. W. Best, Esq., Harvest Hill (J. Singley, gardener); and F. Huth, Esq, Hinmead Hall (T. Feist, gardener), also sent good groups of plants, all arranged in this tent. In the amateurs' tent similar exhibits of plants came from T. T. C. Lister, Esq., Borde Hill (R. Inglis, gardener), and Mrs. Meberly Mytten (J. Mitchell, gardener), while a fine lot of plants and cut flowers from Messrs. Balchin & Sons, Hassocks; several fine boxes of Roses from Mr. Piper of Uckfield; collections of dried grasses and hardy flowers, &c., from Messrs. Roots, Cuckfield; and a miscellaneous collection of Dahlias, plants, &c., from Messrs. Cheal & Sons, Crawley, made up a display well worthy of the town and district.

A few special prizes are offered for gentlemen's gardeners. Mr. Manton, gardener to Mrs. Clifford-Borrer, Bolney, secured Messrs. Sutton's prize for a tray of vegetables with splendid samples, all good. Mr. J. Mitchell was first for a similar prize given by Messrs. Cheal and Sons. Mr. Stringer was awarded Mr. Pannett's (of Chailey) prize for twelve Dahlias, with fine blooms for the season. Messrs. Balchin's prize for black Grapes was easily won by Geo. Warren, gardener to Mrs. Hankey, Balcombe Place, with well coloured, though rather loose, bunches. Mr. T. Burtenshaw was awarded Mr. Piper's prize for twelve Roses. Here let me state a fact not quite creditable to the tradesmen of Cuckfield. Out of nine special prizes offered only two are given by men residing in the district. The Show was well attended, and the receipts at the gate satisfactory. The duties of Secretary was ably carried out by J. Tugwell, sen.

PORTMADOC.

This excellent Society held its ninth annual Show as above in the park in what may fitly be termed Queen's weather. On the whole the exhibits were neither as numerous, nor perhaps as meritorious, as have been brought together here in former years, a variety of circumstances contributing towards this result. The Society is, however, in a flourishing condition, and promises well for future successes.

Mention should be made of special awards given by Messrs. Barr and Son, London; Messrs. Daniels Bros., Norwich; Messrs. W. Clibran and Son, Altrincham and Manchester; and Mr. T. Cumming, which elicited a good competition.

Several meritorious stands were put up "not for competition," R. M. Greaves, Esq., Wern, having a choice collection of Ferns and Palms. Mrs. Osmond Williams, Dendroeth Castle, most tastefully arranged water bouquets and decorative plants, reflecting credit upon her able gardener, Mr. Ward. Trade exhibits were confined to Messrs. Dickson, Chester, and Messrs. W. Clibran & Son, Oldfield Nurseries, Altrincham, the former with stands of cut Roses and herbaceous flowers in their usual style, and the latter with a large stand of decorative, foliage and flowering plants coming in for unstinted attention, and some stands of Roses highly creditable for such a season. From their cut flower depôt also an exhibit of special merit was sent, consisting of wreath, anchor, and bouquet, all of which were greatly admired.

The fruit exhibited was certainly good, first for black and white Grapes falling to, and well merited by, J. E. Greaves, Esq., Criccieth (Mr. Morgan, gardener), second in both cases secured by J. Vaughan, Esq., Nannau (Mr. Cooke, gardener), with excellent bunches but not quite so well finished. Peaches.—Mr. Cooke was well to the fore here, Mr. Percival being second. H. J. Ellis Nanney, Gwynfryn, was first with a green fleshed Melon (Mr. Roberts, gardener); Lady Ewing, Bettws-y-Coed, first with a scarlet-flesh; Mr. Townhend (gardener, Mr. Roberts), taking second.

In the plant classes we come upon three Achimenes, which secured for Mr. Roberts, gardener, Gwynfryn, first prize, and which for size, training, and bloom were admirable. Other successful exhibitors in plants were J. E. Greaves, F. S. Percival, R. Pugh Jones, Ynysgain, Mrs. Osmond Williams, Lady Ewing, and R. M. Greaves.

Cut Flowers.—Capt. Wynn Griffith, Llanfair Hall, took first honours with Asters and double Dahlias (J. Ellis, gardener); Carnations, D. Homfray, Esq., Portmadoc. Pansies.—Mr. Cooke, Nannau, as usual took first; second, J. M'Lean, Minford. Collection of Cut Flowers.—First, Mr. Cooke; second, Miss Rae, Tanybwlch; third, Capt. Wynn Griffith. Buttonhole Bouquet.—First, Mr. Cooke; second, F. S. Percival. Bridal Bouquet of Outdoor Flowers.—First, Mr. Cooke; second, F. S. Percival; third, Mrs. Osmond Williams. Bouquets of Stove and Greenhouse Flowers.—First, F. S. Percival; second, R. P. Jones.

Vegetables are always strongly shown, this year being no exception, amateurs and cottagers being particularly good. It is sufficient testimony to the good work of the Society to see the exhibits that are brought here annually, and to see throughout the season the humblest cottager improving his own and no less his neighbour's condition by striving hard and constantly for the honour of winning a prize or series of prizes on the great show day.

One of these hardworking men carried proudly away from the Show no less than nineteen prizes, notwithstanding the keen competition. One of the old-hand gardeners, too, is to be congratulated on taking away thirteen prizes, ten of them being first.



KITCHEN GARDEN.

Lifting and Storing Early Potatoes.—The disease we anticipated some weeks ago has come, and some varieties are badly affected. Some of the early ones have escaped; the latest are not touched, but the second early and midseason sorts are the worst. Unfortunately these are not ripe, or we should advise their being dug up and stored at once; but it would be a mistake to do this until they are matured, but all early Potatoes should be lifted and stored at once. When the weather is favourable let them remain in the air for a few hours after lifting to dry, but do not expose them to much light afterwards. Remove any affected with disease, and store all that can be secured. We have been so exempt from disease for a few years that little attention has been given to it of late, but this year is a disagreeable reminder, and those who cultivate a large quantity of early Potatoes will be lucky. Indeed, there is no better way of securing a crop free from disease than to grow a large proportion of early ones, and all who suffer from the disease this year should bear this in mind at planting time next spring.

Old Cabbages.—Plants which have been heading during the summer are now over, and the question is what to do with them. If other kinds of winter greens are good and plentiful the Cabbage stumps may be drawn up and thrown away, and the ground filled with winter Spinach or some other crop; but if vegetables for the early winter are likely to be scarce the Cabbages should be kept, as they will produce many side shoots that will form useful little heads, and these are valuable in times of need. When it is decided to do this the decayed leaves should be cleared from them and the weeds hoed out. Some time ago we planted some spring-sown Cabbages. These are about half grown now, and by October they will be ready for use; but we are never in a hurry to throw the old plants away, as they frequently turn in most useful when vegetables are scarce.

Autumn Onions.—Onions sown last year did not bulb very well in

the fore part of the summer, but of late they have swelled rapidly, and at the present time we have bulbs of Trebons weighing 1¾ lb. This is a grand Onion for sowing in autumn; indeed it is the best, and we have just sown 6 ozs. of seed. Giant Rocca is the commonly sown variety, but in many cases it splits and fails before the bulbs are really in good form, and it does not keep very well; we are not sowing it this autumn, but put in a few White Tripoli for the early crop and depend on Trebons for the main supply. All matured autumn Onions should now be drawn and cleared from the ground, but only the best should be stored. They must be laid in the sun for a time before cutting off the stems.

CELERY.—We are never troubled with Celery bolting, but some complain of it, and where many of the plants are running to seed they may interfere with the supply, as seeding plants are useless at all times; and if late plants have been retained in the seed bed a quantity should be planted out to take the place of those that are seeding. A deficiency of Celery is often severely felt in the kitchen, and the supply should be kept up by all means. The American White Plume is now ready with us. It is really very good, and as it requires no earthing up it may be cultivated very cheaply. Plants intended for use in October and November should not be fully earthed up, but late plants need not be earthed until they have gained considerable size.

WINTER TURNIPS.—Turnips always bulb best when well thinned, and although it is very necessary to thin them freely in summer, it is still more so with the winter crop. Those intended for winter have been thinned once, and they are now 4 or 5 inches apart, but this is much too close, and we are about to thin them all to 15 inches apart. This is a good distance for winter Turnips, and it is much better to thin them when small than allow them to grow and then find they are too close. Bulbs produced in this way are never so fine or hardy as those properly thinned out from the first.

RUNNER BEANS.—We never knew Runner Beans to be so scarce in August as they are this year. Some pods are much in advance of others, and all of these forward pods should be carefully gathered at once. If left they would soon become too old and check the main supply which is yet to come. Should the weather remain dry a good soaking of liquid manure occasionally would greatly benefit the crop.

GLOBE ARTICHOKES.—Cut the old stems from these, and should all the heads not have been used and some of them become too old remove them also, as by doing this some of the forward growths may be induced to throw up young stems, which will produce small useful heads in October or November.

SOWING CAULIFLOWERS.—Where Cauliflowers are wanted early in the spring a good mode of securing them is to sow the seed in the autumn, winter the plants in a frame, and have them ready for planting the first opportunity in spring. The present is the proper time to sow. We prefer sowing the seed in a little bed on a warm sunny spot in the open, lifting the plants and putting them in the frames in October, to the plan of sowing them in a frame altogether. Plants raised in the open are always robust and generally pass the winter well. The secret of having good Cauliflower plants in spring is to keep them hardy in autumn and never protect them until it is necessary to do so.

FRUIT FORCING.

VINES.—*Earliest House.*—Trees in this house will be casting their leaves, and should have all the ventilation practicable, and the border allowed to become as dry as is consistent with preservation of the roots. The Vines should be pruned at the end of the present or early part of next month at the latest, the house thoroughly cleansed, repaired, and if required painted, the Vines being dressed, removing no more than the loose bark, and washing the rods with a solution of softsoap, 8 ozs. to the gallon of water. If there be any scale or mealy bug a wineglassful of petroleum may be added, with flowers of sulphur to bring it to the consistency of cream. Apply it to every part, after mixing thoroughly with a brush. The borders, both inside and outside, should be cleared of the old mulching material and the loose surface soil, and have a top-dressing of turfy loam, with about a fifteenth part of bone dust incorporated. If the border be dry a moderate watering should be given, and the house kept as cool as possible.

Houses Started Late.—This is a great mistake, particularly when the varieties are late, which as a rule require a long time to ripen, necessitating, especially in a season like the present, sharp firing to have the fruit well ripened by the middle or end of next month at latest. Maintain a night temperature of 65° to 70°, to 75° or 80° by day up to 85° or 90° with sun, this being the period to make up for lost time instead of deferring firing until the Grapes show colour, as they may not do until September is well advanced, prolonging the ripening into October or later. Grapes so ripened do not keep plump or satisfactory to a late period. The atmospheric moisture, as well as that at the roots, must be kept up in proportion to the condition of the Vines and the temperature maintained, accompanied with free ventilation so as to accelerate the ripening process. Vines in other houses that were started in good time will be well advanced towards ripening, and should have the atmospheric moisture reduced gradually without giving more fire heat than is necessary to keep up a circulation of dry warm air, to secure well-ripened wood and highly finished fruit.

Vines from which the Grapes have been cut must have all the laterals closely stopped, and a dry warm atmosphere with abundant ventilation maintained to insure the thorough maturation of the wood. With a view to the preservation of the foliage, give a good washing with the garden engine on fine evenings, especially if there be traces of red spider.

PINES.—Suckers obtained from the summer fruiting plants will soon be ready to be repotted. Transfer the strongest to pots 10 and 11 inches in diameter according to the variety, affording the plants a position near the glass in a light airy house, keeping them gradually growing throughout the winter months, under which conditions they will start into fruit readily about the following May or June, and afford a good supply of early autumn fruit. The remaining portion of the plants above referred to should be wintered in 7 or 8-inch pots, and placed in larger pots in spring. These, with suckers of Smooth-leaved Cayenne and Charlotte Rothschild started last March, will without much difficulty provide a successional supply of ripe fruit throughout the winter months, and be supplemented by Queens and others which were started at the same time. At this period of the year it will be necessary to effect a re-arrangement of the plants which were started as suckers last autumn, many of the free-fruiting varieties now having fruit swelling; and these should be separated from the others, as plants not in that condition will by this time have completed their growth, and will more readily start into fruit at the required time by subjecting them to more liberal ventilation during the next six weeks when the temperature exceeds 80°, the temperature at the roots being kept at 75° to 80°. For plants that have been recently repotted 90° at the roots is suitable, but for plants well established a mean of 80° is best. When fruit is swelling the atmosphere should be kept moderately moist, and a little air admitted at the top of the house early in the morning to dispel superfluous moisture before the sun's rays act powerfully on the fruit. Ripe fruit required to be kept must be moved to a shady house and have abundant ventilation. Shading should be dispensed with except for rootless suckers.

MELONS.—In pits and frames the last plants will have set or be setting their fruits. Ours are well set, the atmosphere having been kept dry, and are swelling away freely. We now sprinkle the plants with tepid water and close early in the afternoon at 80° to 85°, admitting air at 75°, increasing with the advancing sun heat to 85° or 90°. Those in frames should be attended to as required with linings of sweetened fermenting material as the nights become cold, so as to prevent the temperature falling below 65° in the morning, and if mats are placed over the lights after the sun leaves the frames, and removed shortly after the sun has risen, very much better results will be had with late Melons than usually results from frames.

Maintain a night temperature of 60° to 70° at night, and 75° by day in Melon houses heated by hot water. As the days are shorter lessened supplies of water will be required, yet give sufficient to keep the soil in a moist state whilst the fruit is swelling, but after it is full sized or ceases swelling afford no more than to maintain the foliage from flagging. Keep the laterals well stopped to one leaf, and rub off superfluous shoots as they show, allowing nothing to interfere with the principal leaves or to retard the swelling of the fruit. Plants with fruit advanced for ripening should be kept dry at the roots and have air very liberally, with, if practicable, an advance of temperature, avoiding a close moist atmosphere, which invariably results in cracking of the fruit or inferior flavour. The last plants will have been placed in houses and are growing freely. The leader must not be stopped until it reaches the trellis, when it may be pinched out if more than one leader is wanted, or may be allowed to grow two-thirds of the distance up the trellis if only one leader is wanted, and then be stopped, removing every alternate lateral directly they can be handled. Maintain a moist and warm atmosphere—70° to 75° by artificial means, with the bottom heat at 80° to 85°. Keep a sharp look out for canker at the collar and upon the stem, rubbing quicklime well into the parts affected, striving to maintain a clean growth and healthy collars to the last.

PLANT HOUSES.

Camellias.—The earliest plants will be swelling their flower buds rapidly, and weak stimulants will prove beneficial. They need assistance more at this than at any other stage of their growth. Strong stimulants should be avoided, for they are liable to overforce the plants, with the result that the buds will eventually fall. Weak stimulants, such as clear soot water, light sprinklings of Clay's fertiliser, or that made from cow manure liberally diluted with water may, with advantage, be given weekly until the flowers commence expanding. The utmost care must be taken that the plants receive no check or disappointment will follow. Water liberally and syringe freely twice during the day. Disbudding may be practised at once by the removal of all small and badly placed flower buds. If insects exist upon the plants syringe them with petroleum and water at the rate of 3 ozs. to 4 gallons of water. This will do no harm to the buds or plants, but if very strong doses are used the effect may be visible about the time the blooms should expand. Later plants just completing their growth must be carefully treated, for in this stage they are liable to start again into growth. Give abundance of air and maintain a drier atmosphere until the buds commence to form, when the syringe may be used and the moisture in the atmosphere increased.

Azaleas.—Plants of narcissiflora, amœna, indica, and such varieties that have been forced into bloom early for several years past will be swelling their flower buds rapidly. Some of these are coming forward too quickly, and it will therefore be necessary to carefully harden them and place them outside in a northern position. They should have been out before now, but the wet weather would have proved serious to the well-being of these plants. Plants that are not too

forward should have a sunny position, their pots only needing protection from the burning rays of the sun. A northern position is only advised for the purpose of retarding them. While they are outside syringe them morning and evening when the weather is bright, and be careful that they do not suffer by an insufficiency of water at their roots. Those about to complete their growth should have abundance of air and as much light as possible, provided they are not exposed to such an extent that the sun will brown their foliage. Plants that flowered in May must be pushed on so that their growth can be brought to a standstill as early as possible.

THE BEE-KEEPER.

THE LESSON OF THE YEAR.

The advantage of using large roomy hives capable of containing a good supply of food has been made more manifest than ever during the last two months. Those bee-keepers who in anticipation of the harvest contracted the broad nest in order to compel the bees to go into the supers have no doubt had time to repent at leisure. A body box crammed with bees and brood in every stage of growth, yet containing but a small quantity of honey, must have been an encouraging feature during the storms and rain of last June and July. The knowledge that stocks so treated are ever on the brink of starvation must have given zest to the bee-keeper's disappointment, and have filled his cup of sorrow to overflowing. Most people learn by experience, and if experience is a hard teacher her lessons are all the more perfectly taught and indelibly impressed upon her unwilling pupils.

The constant fidget and anxiety of knowing that a stock is short of food and yet crowded with bees, the inconvenience of having to remove supers in order to remedy this evil, and the consequent disturbance of the stock must be patent to all, and yet many bee-keepers reduce their stocks to poverty to induce them to work more zealously in supers. In fine warm weather such a course of management may partially succeed, but when cold, wet, and sunless days intervene before the supers contain any honey at all then the stock is in imminent danger, and the bee-keeper may well fear to lose—and richly does he merit the misfortune—all chance of a harvest. Such a fatal result may be prevented we know by timely feeding, but where is the common sense of making feeding necessary by taking away the food already provided? Yet this is constantly done.

How different the result when a little common sense and forethought are brought into play! Then we see a different system of management, and as a consequence a larger result. The man who uses a roomy hive and always keeps a good supply of food in reach of his bees has no cause to fear that a week's bad weather will ruin his stocks unless he renders them constant assistance. He knows that sufficient food is stored to guard against all normal bad weather, and may rest easy with the assurance that a few days' rain will not do much injury, and that even a longer period of inclement weather will not damage his prospect to any considerable extent. But it may be urged that bees in large hives are not so ready to work in supers. Is this so? Provided a stock is strong in numbers, and supers are placed at the proper time—before, that is to say, the stock has determined to send out a swarm, and yet not until the hive is crowded with bees—supers are readily taken possession of by the bees, and the work makes rapid and satisfactory progress. Of course when stocks are not really strong enough to enter supers, then by contracting the space in the body box the bees are compelled to find a proportionate amount of room elsewhere, and consequently it is only necessary to contract the brood nest sufficiently to compel the bees to enter and remain in supers. Now for the result of such a masterly policy of activity. The laying space of the queen is diminished, therefore the number of bees reared in such a stock is limited; the queen cannot find room to deposit the eggs with which she is heavy, therefore the desire to swarm is engendered; there is not sufficient room for brood alone, therefore every cell formerly taken up by honey is, when such honey is consumed, used for brood; the frames being filled with brood there is no food supply, and as a result a few days of bad weather endanger the well-being of the stock.

By using roomy hives all these evils are averted. The queen has sufficient space for the exercise of all her powers; no desire to swarm is therefore, under normal conditions, engendered. The stock continues to grow daily more populous, and the bees are encouraged to rear brood because there is a proper supply of food to encourage them, and supers are entered when the population of the hive is in excess of that which it is able to accommodate. Now, the swarming mania killed, a large population constantly increasing, and an absence of want give to the bee-keeper a much better prospect of surplus than starving stocklets artificially compelled to enter supers by the measures of a bee-keeper who calculates that by taking away space in the place a proportionate space must be afforded elsewhere to accommodate the population thus crowded into a smaller space than they have previously occupied with comfort. If this year of loss has taught the lesson which some bee-keepers decline to learn by looking at the experience of others such loss will not be without some gain.—Felix.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Grapes (*Andromeda*).—When editorial letters are directed to the publisher in connection with matters of business some delay is inevitable in their delivery, the departments being distinct and conducted by separate staffs of officials. That is the reason your letter did not reach us till after the arrival of the Grapes last week; the reply, however, and reference we gave would meet your case. The collapse of Grapes, what is known as scalding, has been very prevalent this year.

Mushrooms (*Inquirer*).—The specimens you send are of the Horse Mushroom, Agaricus arvensis. They are safely eaten when gathered dry and in a fresh state, before the laminæ or gills assume a dark or blackish colour, but lack the delicate flavour of the true meadow Mushroom, Agaricus campestris. They are freely used for making ketchup Your letter arrived too late to be answered last week. This reply will be recognised, though your name is omitted.

Young Vines (*J. E.*).—We are glad to hear our advice has answered so well. The leading shoots we understand reach the top of the house. Some growers would let them run down the back wall, and further allow all the laterals that might push to grow unchecked to "encourage root action;" others, of which Mr. William Taylor, who grows Grapes so well, would top the growths and pinch succeeding laterals to a leaf as soon as their points could be seized with the finger and thumb. That is evidently Mr. Abbey's plan, as you may gather on reading an able article containing reasons for it on page 114.

Grapes Splitting (*Devonian*).—We have received the berries, and regret to say if you have no means of applying heat to dry the atmosphere that you are almost powerless to check the evil if dull wet weather continue. All you can do is to ventilate early and as fully as possible on all occasions when it would dissipate the moisture in the house, every part of which should be kept dry in your proverbially damp district. The cold and wet have prevented the fruit swelling outdoors, and injuriously affected the Liliums. The season has been abnormal, and we must hope for better weather and results next year.

Under Gardener Leaving (*T. S.*).—The man who has given you a month's notice to leave, and informs you that he is legally entitled to

two half days in each week for the purpose of seeking other employment, and to be paid for that time, which is implied, is in error. No such right exists under the circumstances, and there is no custom generally recognised on which he could base such claim. Like yourself, many or most gardeners and employers would grant a man reasonable time for making personal application in the case of a known vacancy; but a right to a roving commission as suggested is visionary. The man is under a misapprehension, and has perhaps been misled, therefore may be excused for making a demand instead of asking a favour.

Arranging Pipes (*H. H. C.*).—Your question cannot be satisfactorily answered without particulars as to the position of the boiler, feed cistern, and length of pipes; indeed, a plan of the proposed arrangement drawn to scale is essential. It may be stated that as a rule a dip such as you mention impedes the circulation, and in all probability the water would flow more freely if the pipes were taken over the doorway; and if they were conducted just under the eaves of the house, so to say, and close to the base of the rafters, they would answer the purpose as well, and possibly better than placed along the ground or just above it. But wherever the pipes are, the bottom of the feed cistern should be on a level with the highest part of them, or they cannot be filled.

Answering Questions (*A. McD.*).—We assure you it is no "trouble" whatever to us to answer such questions as we are able to answer on gardening matters for our regular subscribers. The fact that you have only asked two, and in "both cases had to write again" before you received replies, is, to say the least, unfortunate. The last letter we received was answered promptly. There was no delay about that certainly, and the other event of four years is beyond our recollection. We have had many thousands of letters since then that have passed out of mind. It is almost a pleasure to be found fault with a little when you do it so generously, praising our work at the same time. We regret it is not in our power to prevent an occasional letter going astray.

Tomato Plants Flagging (*H. F. S.*).—Your general treatment, as described, appears to be good, so far, at least, as regards soil and watering; but we are not so sure the method of ventilation is all that it should be. When we are told the doors of houses are used as ventilators we always have a suspicion that there is room for improvement. The most successful cultivators do not make it a practice of leaving the doors of their houses open, though Tomatoes will endure this as well as most things. Do you open the top sashes early enough in the morning? They should be opened to some extent as soon as the sun shines on them. No amount of late ventilation can atone for the fault of leaving houses closed too long. Have you top-dressed the bed in which the plants are growing? If not, do so with rough turfy loam, surfacing with good short manure. This, kept moist, will incite the production of the "small white fibrous roots the plants lack." Constant applications of liquid manure are not conducive to the increase of such roots, and especially if rather too strong, as yours may be, though it looks weak. Try the top-dressing, giving water very copiously when the soil appears in the least dry, alternating with liquid manure, or giving it weaker. After much dull weather the leaves of most plants are liable to flag when the sun comes out suddenly and shines brightly, Cabbages in the garden being no exception. The absence of fibrous roots, with faulty and possibly too late morning ventilation, are, we suspect, the main causes of what you describe as the collapse of your plants.

Value of Prizes (*F. Walker, Launceston*).—When a prize is offered for the "most successful exhibitor" at a show in England, to be determined on the prizes won, it is customary, and we think fair, to allow three points of merit for first, two points for second, and one point for third prize, special prizes, when only one is offered in a class, ranking as firsts, and counting three for the purposes of adjudication. According to this exhibitor A in your contest must lose by five points, his total being thirty-one, that of B thirty-six. According to your method, in which it appears no third prizes were provided, the Judges and Committee were right, and according to the "English method" the defeat of A would appear to be still more conclusive; and if A had been B he would, perhaps, not have thought himself "wronged" if all the points of merit were credited to him to which he was entitled. In regard to Tomatoes, they can undoubtedly be grown cheaper in Tasmania than in England. The prices vary considerably. This year they are high, and fine fruits grown under glass are now selling at a shilling a pound in fruiterers' shops, but large consignments from southern Europe have been sold retail at from 2d. to 3d. a pound. Large quantities of canned Tomatoes come from America, and probably also Tomato sauce, but we do not think there are exact records of the extent of the importations. Tomato sauce is variable in quality and price. Tomatoes grow and ripen in fields in America as well as in Tasmania. Possibly your best method of acquiring the information you need will be by writing to such London firms as Messrs. Crosse & Blackwell, Soho Square, W.; R. Pink & Sons, 7, Eastcheap; and E. Lazenby & Sons 18, Trinity Street, Borough, S.E.

Mrs. Pearson Grape Failing (*H. B.*).—You appear to have waited till the last moment before sending the Grapes and letter, and thereby waited too long for receiving a reply last week. Every berry, again, arrived split and broken, we presume through shaking about in the tin box, for you would scarcely have enclosed a letter with fruit in such a wet state, and some of the writing is obliterated. You have perhaps not had much experience in sending soft fruit through the post, and it may be useful for you to know that it should be so packed as to be immoveable in boxes. The leaves now sent show plainly that the Vines are in a very enfeebled and unhealthy state, and the presence of roots on the rods suggest that those in the soil are defective. It is quite certain they are not supplying what the Vines need. How the evil has been brought about we have no means of knowing, possibly overcropping when the Vines were young, though you say nothing about their age nor the composition of the border. Your method of ventilation appears to be sound, and we have no fault to find with the temperatures. Unless a special desire exists to grow this variety we should uproot the Vines, for it will be a task of no small difficulty restoring their lost vigour. If they must be retained the fruit should be cut and the roots placed in fresh soil, cropping lightly, if at all, next year. Mrs. Pearson Vines usually grow freely, and there is something wrong with your soil or management. If you remove them the space can soon be filled with additional rods taken from other healthy Vines near without injuring these in the least under good cultivation. Possibly when the Vines were planted the canes were not sufficiently shortened, but borne too soon along their entire length. There is more we should have liked to know that you have omitted, but we can scarcely put questions and give answers too.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*F. O., Chertsey*).—1, Crinum amabile. 2, Clethra alnifolia. 3, Ophiopogon variegatum. 4, Kaulfussia amelloides. 5, Sanseviera zeylanica. (*C. R., Cheshire*).—No numbers were attached to the specimens received, but those with blue, purple, pink, and white flowers are seedling varieties of Centaurea Cyanus; the others appear to be good varieties of Chrysanthemum segetum. (*R., Surrey*).—1, Masdevallia Harryana. 2, Odontoglossum crispum. 3, Odontoglossum maculatum. (*H. W.*).—Salvia Sclarea.

COVENT GARDEN MARKET.—AUGUST 22ND.

MARKET quiet, the soft fruit being nearly finished. Currants higher. Other fruit easier.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	10 0	to 15 0
Cherries, ½ sieve	0 0	0 0	Oranges, per 100	4 0	9 0
Cobs, 100 lbs.	0 0	0 0	Peaches, dozen	2 0	10 0
Currants (Red), ½ sieve	2 6	3 0	Pears, dozen	0 9	1 6
,, (Black), ½ sieve	4 0	5 0	St. Michael Pines, each	3 0	5 0
Grapes, per lb.	1 0	2 6	Strawberries, per lb.	0 0	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 6	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	8 0	14 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	3 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 7
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s d.		s. d.	s. d.
Abutilons, 12 bunches	2 0	to 4 0	Margnerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	2 0	3 0	Mignonette, 12 bunches	1 0	3 0
Asters, dozen bunches	2 0	4 0	Pansies, 12 bchs	1 0	3 0
,, French, per bunch	1 0	1 6	Pelargoniums, 12 trusses	0 6	1 0
Azalea, 12 sprays	0 0	0 0	,, scarlet, 12 trusses	0 3	0 6
Bouvardias, bunch	0 6	1 0	Pinks, varions, 12 bunches	2 0	6 0
Calceolaria, 12 bunches	4 0	6 0	Polyanthus, 12 bunches	0 0	0 0
Camellias, 12 blooms	0 0	0 0	Pyrethrum, doz. bunches	2 0	4 0
Carnations, 12 blooms	1 0	2 0	Roses, Red, 12 blooms	0 6	1 0
,, 12 bunches	4 0	6 0	,, (outdoor), 12 bchs	2 0	6 0
Cornflower, 12 bunches	1 6	3 0	,, (indoor), dozen	0 6	1 0
Daisies, 12 bunches	2 0	4 0	,, Tea, dozen	1 0	2 0
Eucharis, dozen	3 0	6 0	,, yellow	2 0	4 0
Gardenias, 12 blooms	1 6	4 0	,, (Moss), 12 bunches	0 0	0 0
Lapageria, 12 blooms	1 0	2 6	Stephanotis, 12 sprays	1 6	3 0
Lavender, 12 bunches	3 0	4 0	Stocks, 12 bunches	4 0	6 0
Lilium candidum, per bunch	0 0	0 0	Sweet Peas, dozen	2 0	4 0
,, 12 blooms	0 0	0 0	Sweet Sultan, 12 bunches	2 0	4 0
Lilium longiflorum, 12 blooms	2 0	4 0	Tropæolum, 12 bunches	1 0	2 0
			Tuberoses, 12 blooms	0 6	1 0
			Gladiolus, 12 sprays	0 6	1 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Fuchsia, dozen pots	3 0	to 6 0
Arbor vitæ (goldon) dozen	12 0	24 0	Genista, per dozen	0 0	0 0
Asters, 12 pots	3 0	6 0	Heliotrope, dozen pots	3 0	6 0
Balsams, per dozen	3 0	6 0	Ivy Geranium	3 0	6 0
Calceolaria, per dozen	4 0	5 0	Hydrangea, dozen	6 0	12 0
Cineraria, dozen	0 0	0 0	Lilies Valley, dozen	0 0	0 0
Coleus, dozen	2 0	4 0	Lilium, various, doz. pots	12 0	21 0
Crassula, dozen	8 0	12 0	Margnerite Daisy, dozen	6 0	12 0
Dracæna terminalis, doz.	30 0	60 0	Mignonette, per dozen	4 0	6 0
,, viridis, dozen	12 0	24 0	Musk, dozen pots	0 0	0 0
Euonymus, in var., dozen	6 0	18 0	Myrtles, dozen	6 0	12 0
Evergreens, in var., dozen	6 0	24 0	Nasturtiums, per dozen	3 0	6 0
Ferns, in variety, dozen	4 0	18 0	Palms, in var., each	2 6	21 0
Ficus elastica, each	1 6	7 0	Pelargoniums, dozen	4 0	9 0
Foliage Plants, var., each	2 0	10 0	,, scarlet, doz.	3 0	6 0



FEEDING MIXTURES AND MANURES.

Protection from fraud in purchased food for animals of the farm, and in all fertilisers included under the comprehensive and popular term of artificial manures, is being sought more and more by farmers generally, and this sensible conduct is undoubtedly part and parcel of the wholesome economy enforced by hard times. Retrenchment in everything possible has been and is still going on, and among the waste and losses arising from ignorance and carelessness to which thorough-going reform is being applied, feeding cakes and mixed or prepared manures hold a leading place.

The Royal Agricultural Society of England, the Bath and West of England, and kindred societies all hold out a helping hand in this useful work by the facilities enjoyed by their members for having analyses made at a nominal cost by Dr. Voelcker and other chemists whose ability and character are altogether above suspicion. Full reports of this work are published periodically, and they certainly disclose a lamentable condition of things which have doubtless been long in existence, and which have tended in a remarkable degree to injure, and in many an instance to hasten the downfall of many a worthy farmer. Sweeping and unsparing is the condemnation of those firms who are thus shown to be trading upon the confidence reposed in them ; but what is so very alarming is the well proved fact that it is quite the exception to meet with cake or manure which passes with impunity through the ordeal of the chemist's laboratory.

In the annual report for 1887 of the consulting chemist of the Royal Agricultural Society of England he wisely lays down that "there never was a time when farmers should more strongly insist upon having only pure cakes supplied to them, and make a point of getting a guarantee for the cakes being so. It is a frequent practice for a manufacturer or dealer to put forward an analysis giving merely the per-centage figures of the different constituents. But it must be remembered that it cannot be a matter of indifference whether what is stated in an analysis as 'oil ' is *linseed* oil or some other of inferior value ; and similarly whether the nitrogen and other elements arise from *linseed* or from some less valuable material. I would urge this necessity of insisting upon pure cake being used, inasmuch as so soon as admixture of any kind is admitted, there is no limit to its quality or its nature." He suggests that the requirements which a linseed cake should satisfy in order to be fairly termed a pure one are :—

1, That it be made from sound seed of not less than 95 per cent. purity, subsequently well screened.

2, That it contain no ingredients of a poisonous or deleterious nature.

3, That it be entirely free from sophistication of any kind.

4, That it contain not more than 2 per cent. of sand.

5, That it be sold in good merchantable condition.

As showing how largely aid is sought in this matter now we may mention the fact of 1615 samples being analysed in 1887, and the number will probably be still higher this year, as so many glaring examples of adulteration by firms of repute were detected. To quote a few examples we may take the following. Of linsced cake, "this is adulterated cake, containing quantities of locust bean, also cotton husk, and other foreign seeds, besides over 5 per cent. of sand." Of boiled bones, "this sample is adulterated with sulphate of lime (gypsum), and has over 2½ per cent. of salt." Of a patent carbon fertiliser for Oats, "a material not worth a sixth of what it costs." Then we are told of manure bought as dissolved bones which is not dissolved bones at all ; of other samples of cake containing an immense quantity of weed and other seeds, or which were impure and nasty, containing besides 4 per cent. of sand, cotton husk, niger seed, and other impurities.

Clearly, all this teaches that neither manufactured cake or manure should ever be bought without a guarantee of purity, and subject to analysis. Better still would it be to avoid such doubtful articles altogether. As our readers know we have done so for a considerable time, and prefer to select and mix our own manures, notwithstanding the labour, time, and care involved in doing so, for we have the satisfaction of knowing that we thus avoid all risk of loss from adulteration, and that the soil is rich in fertility. By careful management the use of cake may also be avoided, as much as possible home-grown corn and fodder should be used, and uncrushed linseed may enter largely into the dietary of our cattle. But for real fattening purposes we desire nothing better than a well balanced mixture of Beans, Oats, Barley, and Peas, either crushed or ground to meal. Of Oats we have such an abundant foreign supply at such low rates that is only under first-class culture we desire to use land for Oats at all.

WORK ON THE HOME FARM.

If the haymaking was at first tedious it became brisk and satisfactory enough towards the end, but for Clover, Sainfoin, and grass it extended over a period of nearly two months, and were therefore a tedious and costly process. We have some fine stacks: they are thatched and insured, and are therefore well off our hands for the moment. We must own to feeling some anxiety about rather heavy arrears of hoeing amongst root crops, especially in the later sowings of white Turnips. This is all the more serious because harvest is upon us and we shall have to manage as best we can by means of what extra labour can be had. This sounds like an outcome of bad management, but it only exists at two of our farms where the haymaking was exceptionally heavy, and we may add that with several hundred of acres of hay to save in a wet season, the most well-considered plans are liable to be upset.

Peas, Oats, Rye, and Wheat are the corn crops now ready for and being mown. The rate of pay is from £7 to £8 per man, and the average acreage is about thirteen per man, including the reaping, binding, carting, and stacking. We shall use no self-binders this season, for so much of the best Barley is beaten down that binding is out of the question, and the actual reaping will prove by no means an easy matter. Many Oats and Peas are already in stack, and on light land Wheat follows closely. There is much difference in the Wheat crop this season, much of the late sown Wheat being still quite green, but we are glad to find anything like blight or disease is the exception and not the rule this season. Our chief anxiety in connection with the harvest is about the Barley. The grain is so far excellent if only we can save it without much exposure to heavy rain, so as to ensure quality in combination with quantity. The outlook for both green fodder and hay next season is excellent ; never were young Clover and other layers more luxuriant or a fuller plant, and we appreciate this success all the more from the very general failure of layers last season. Owing to this failure both Clover, hay, and home grown seed will be scarce, and it is probable that very few old layers will be left over till spring. We are folding sheep upon them, and ploughs follow in preparation of the soil for Wheat sowing.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. August.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 12	30.006	65 2	60 5	S.W.	62.0	73.6	49 8	122 4	57 5	—
Monday..... 13	29.843	63.5	55.4	W.	62.1	77.4	56.5	121.6	52.2	—
Tuesday 14	30.221	59.7	52.7	S.W.	61.7	69 7	46 3	120 4	39.8	—
Wednesday.. 15	30.105	55.6	52 3	N.E.	61 3	64 9	47 4	102.3	41.4	—
Thursday.... 16	30.149	58 4	51.7	N.	60.0	62 6	45.2	105.6	39.7	—
Friday 17	30.146	54.6	50.2	E.	59.2	62.1	47 4	92 4	40.8	—
Saturday 18	30.247	55.7	52.2	N.	58.7	65 8	48 4	114.2	46.7	—
	30.102	59 0	53 6		60 7	68.0	50.1	111.4	45.4	

REMARKS.

12th.—Fair, but generally overcast except for an hour or two at midday.

13th.—Spots of rain early ; bright day with strong wind.

14th.—Bright and fresh.

15th.—Overcast morning ; fair afternoon, with a little sunshine, but cool throughout.

16th.—Bright early ; cool and generally cloudy day.

17th.—Overcast and cold throughout.

18th.—Dull morning and fair afternoon, but cool.

A rainless week following a dry one. Temperature lower, and weather generally dull.—G. J. Symons.

VINES IN POTS.

WHATEVER may be urged in favour of "cut-backs" for early forcing (that is, canes of moderate size, or those suitable for planting) or the reverse, it cannot be questioned that firm, stout, well-ripened canes can be produced in one season from eyes. The system of using cut-backs for this purpose in many establishments is practically obsolete. Keen competition and principles of economy have had much to do with this, for all must admit it is needless to grow a plant two years if the same results can be achieved in one. Good canes that will fruit freely can be produced in one, but they bear no comparison for early forcing with those that are the result of two years' growth. But the growth and treatment of the two, while in some respects they are the same, must in others be totally dissimilar. This assertion will, I think, be largely borne out by the practice of those who have to force them and produce the fruit in a ripe condition. Those grown from eyes are suitable for forcing after Christmas, and for that period of the year are equally as good as two-year-old canes, but for the production of ripe fruit by the first week in May they are not suitable. It may be necessary for comparison to trace briefly the two systems of culture.

Cut-backs, such as I have described, have in some establishments given place to a much smaller kind of cane for the purpose. These are the latest of those raised from eyes, and are only shifted once from the pot in which the eyes were started. As a rule they are accorded a makeshift place, and finally grown under the shade of those intended for fruiters. This is not always the case, but they usually have second-rate positions. They are allowed to attain from 15 inches to 2 feet in height, and are then pinched as many times during the season as requisite to keep them in that condition. Young Vines of this description are preferable to cutting back planting canes only from one point of view, and that is because they do not entail the same labour or take up the same amount of space. I have never viewed these stunted youngsters in a favourable light. Grown in the shade and confined at their roots, they cannot possibly be in the most satisfactory condition for growing vigorously the following season. The principle of pinching them is right, provided they were placed in 8, instead or 6-inch or smaller pots, and grown and ripened under the influence of full light and sunshine. Such Vines would be much better than the ordinary cane grown 6 or 7 feet in length and then pinched. The latter concentrates its energies in the production of plump buds and wood at the top, while the other thickens at the base and has bold buds from which to start the following season. Canes grown either from cut-backs or these small Vines are no better for the production of canes for early forcing if they are only pushed along side by side with those that are grown from eyes. By February they should have 2 to 3 feet of growth, and from that time extend rapidly until the desired length has been attained, and then stopped. By the middle of May they will have developed almost to their full size and the work of solidity be well advanced. However good the treatment of those from eyes may be, they cannot attain this condition for at least three months later. The one by that time is thoroughly matured, the other has to mature. Which, then, is the best for early forcing, a cut-back well and properly grown, or one from an eye? There is no comparison, for the first has enjoyed a good season of repose before the other loses its foliage, if that is cared for in its last stages. If Vines raised in a season are used for early forcing, the foliage is removed prematurely, they are robbed of a season of rest; refusing to start into growth by gentle means, it must be forced out of them, and Vines subjected to such treatment seldom perfect their crop of fruit.

Cutting back canes of the ordinary planting stamp is not regarded with much favour, because, as a rule, they rarely make such good canes as those grown from eyes. Under any circumstances they are the thickest at the base, but do not attain the same size and strength at the top. Three reasons may be adduced why cut-backs do not succeed as well as those raised from eyes, due entirely to the system of culture accorded them during their latter stages of growth and the method of potting adopted. For some years it has been the practice to turn Vines outside in full leaf during September after the canes have turned brown. Early frosts would destroy the whole of the foliage in a night. Sudden or untimely destruction of the foliage means destruction to the greater part, if not the whole, of the fibry roots. They are in an immature state, and must naturally perish as well as the leaves. The practice of turning out Vines may be more successful in the southern parts of the country than in the north; but the system has extended to the north. It is an uncertain plan, and the risk is great anywhere. The foliage should be preserved as long as possible—that is, all the main leaves, until they naturally present an autumnal appearance. Towards the end of August, or at the latest by the middle of the following month, when the temperature in which they are growing is considerably lowered, remove all the laterals, so that the energies of the plant can be concentrated in storing food for future use and the full development of the buds. Leaving the laterals on until the foliage ripens is only a waste of material. Who would think of destroying the whole of the foliage in a late vinery directly the fruit was ripe? To do so would be regarded as madness. A pot Vine raised from an eye is in exactly the same condition, and yet they are too frequently subjected to such barbarous treatment, and are then expected to fruit or do well another season when they are cut back. I have dealt rather more fully with this part of the subject than I intended, as it is of such importance that it is necessary to impress upon those who grow Vines for sale the desirability of providing shelter for them in their last stages of development.

The third reason is due to the system of potting. If we suppose those to be cut back have matured their foliage and roots, considerable quantities of the latter are destroyed by disentangling them and shaking away the whole of the old compost. This is a serious check to the Vines, and one, if not the main reason, why cut-backs do not give satisfaction the second season. For years I have failed to see what advantages could follow such a severe system of root-pruning. If we dig up an Apple or Pear tree we do not expect it to grow with the same vigour the following season, and why should the Vine be an exception to this rule? When the Vines are to be fruited and then thrown out there is not the slightest occasion for shaking them out when repotting them. If the roots would not take kindly to the new compost then the case would be different, but when potted the roots take possession of the new soil with as much freedom as those of any other plant. If well-ripened canes are wanted from cut-backs they must be started into growth early on the same principles as established Vines, and not plunged in strong bottom heat to force root activity before the top growth is sufficiently advanced. This is too often done in the hope of assisting Nature, and thus gain greater achievements, while the very opposite results.

I have repeatedly proved that cut-backs can be grown into stronger canes when they are potted with the ball of soil intact, merely removing the old drainage, surface soil, and a little round the top of the ball, than can be accomplished by shaking the whole of the soil from them. Cut-backs of this description and strong fruiting canes as well potted will fill their pots with roots during the season. When the Vines are repotted does not matter in the

least; it may be done just as they are breaking into growth or while they are in a dormant state.

I cannot help thinking that with permanent Vines no advantage results from following the orthodox principle of shaking away the soil and spreading out the roots. Canes planted on this principle certainly do not make such a rapid growth the first season as those that are planted without disturbing the roots. For a time, it is true, that the greater care is needed in watering by the latter method, but they soon root out in all directions, and are practically independent of the old ball. If they are in a moist state at planting time, and the soil pressed firmly about them, there is no difficulty in keeping them in that condition.—W. B.

GLADIOLI.

There was in the early part of the year a little controversy about this charming, though fickle, daughter of Flora, and it is a question whether the present season does not add considerably to the character of fickleness in this autumn beauty. One of the points under discussion was the means of inducing late varieties to flower in any season in the north, and in seasons like the present to have more than a few to flower, with the no less important matter of maturing the corms. It may be remembered that I advocated starting the plants in much the same way, and for the same reason, that Potatoes are sprouted. I had some experience of the utility of this process, and again did myself this year what I had advised others to do. The results may be somewhat interesting, and I propose to send a few notes as to the times of flowering of the varieties, appending to this note a list of those now in flower in this the worst season. Some folk will have it that we have never had a worse since 1879, when very few Gladiolus flowered in this district. The plants, it may be noted, were much crippled by the cold easterly frost which did such harm in early June, the tips of the leaves of many plants having been killed, and the foliage then expanded, as a whole, much damaged. All those noted were started in boxes and planted out with good roots in the end of April.

Gandavensis hybrids in flower:—2 Horace Vernet; a fine sort. 1 Carnation. 2 Amiral Courbet; a pleasing bright purplish-rose variety. 3 Arsinoë. 3 Amalthée. 1 Penelope; soft pleasing colour. 1 Dumont d'Urville. 4 Caprice; very beautiful shell-like petals. 9 Shakespeare; a most useful sort. 1 Panorama. 1 Diamant; a flimsy but lovely flower. 1 Orphée; very good. 1 Albion; a good light variety. 1 Archduchesse Marie Christine. 1 Opale; a lovely light sort. 2 M. A. Brongniart; one of the very best.

Of Lemoine's hybrids I have only about sixty plants, of these the following are flowering:—2 Lemoinei; very beautiful. 1 Etoile; much the same shades as above, but quite distinct; fine. 2 Mons. G. Henry; a bright-coloured variety. 1 President Grévy; a lovely flower. 4 Lafayette; very large, 4 inches across the flowers, looks somewhat like Shakespeare with a dash of yellow suffusing the white; very good. 1 Lamartine; as large as the above, and of a pleasing and peculiar shade.—B., *East Lothian, August 24th.*

ARTIFICIAL MANURES.

The enlightened state of your correspondent, Mr. H. Dunkin, is to me a matter of considerable satisfaction; not that I wish to take credit for all the truths that have at last dawned on the controversial horizon of my doughty opponent, but rather let me compliment him on his diligent research amongst scientific authorities, and the interesting and useful facts he has brought forward in the vigorous defence of his views.

Now that the favourable turn of opinion in regard to "combinations" is given in such a candid manner by Mr. Dunkin, I cannot but admire the ingenious way in which he makes the admission· "Judicious combinations" he has discovered in the tenor of my arguments, and yet "properly proportioned combinations" he formerly used as a target for his sarcastic shaft. Where the delicate line of demarcation comes in would, I think, be difficult to decide; whether we call the system we follow by one name or the other, whether it be in the compounding of a perfect plant food, or in the manipulation of the powers we use to attain the object of our desires, the search after perfection will, I still contend, be conducted on these lines.

Artificial manures are even now, in the majority of instances, clumsy compounds, and their application even worse, although a vast improvement is taking place in the host of new plant foods that annually appear, and also in their application at the hands of many cultivators. A good general knowledge of plant life and the science of its support seems to be more general. Not only does the science of plant foods benefit the horticulturist, but to the agriculturist the "knowledge is power," especially in these times of keen competition; and though much has been said and written in derision of the scientific farmer, I am firmly of opinion that he will, with the scientific gardener, pursue his calling to a pecuniary successful issue.

Nothing now remains for me but to thank my ex-opponent for the deep consideration he has given to the questions at issue, and I hope at some future time we may again have the pleasure of crossing a friendly pen. Meanwhile I leave him to continue his scientific studies in peace, and if his efforts should possibly produce a perfect plant food, I will do my best to accord him all the honour due.

To the Editor I tender my thanks for space allowed, and a general apology to long-suffering readers, some of whom are no doubt glad to see this somewhat tedious controversy draw to a close.—M. Coombe, *Ashton Court Gardens, Bristol.*

CABBAGES FOR SPRING.

It is very important to have Cabbage in as early as possible in spring as other vegetables are often scarce at that time, and any addition is valuable. I find that Cabbages are not thought much of during the summer, but as soon as the frost cuts down such tender vegetables as Beans, Cabbage are in request, as also are Savoys. I like to have a good breadth of Colewort ready. Rosette Calewort, Sutton's Little Gem, and Ellam's Early are sown during the last week in May, and sometimes the first week in June. These have never failed to give me plenty of good heads during November and December, and although I have often had some left until the spring, they have all bolted then, and had to be used as greens.

For spring Cabbage I always sow about the 10th, and again about the 20th of July. In 1886 Ellam's Early, sown about the 10th, nearly all bolted in the following spring, and the small plants from the late sowing gave us the best Cabbage in 1887; and yet the same variety, sown at the same date last year, hearted in this spring without one bolting. It would certainly not do to depend entirely on seed sown here (midlands) as early as the 10th of July of the small early sorts. I always prick my plants out in a nursery bed as soon as they have two leaves beside the seed leaves. They are generally ready to plant about the first or second week in September. I do not think we always know the cause of bolting. I believe it is sometimes caused by bad strains of seed, sometimes by the mild weather during winter followed by a very sharp frost, and mild weather coming again suddenly, then if the plants are large they will often bolt. Sometimes it is caused by sowing the seed thick and letting the plants stand in the bed too long, and then planting them in loose rich soil.

As to varieties, I think no one should condemn a variety until he is sure he has the true one. I find that some seedsmen do not send all varieties out true, they generally send out their own particular sorts true, and these can be depended on; they have each their improved strains to which they wish their customers to give the preference. I think I have tried nearly all the varieties of Cabbages, and I find Myatt's Offenham the best for spring. With me it is as early as Ellam's, and has much larger heads, with very little outer leaves. I grew Early York at two or three different times, but it was not so good as some other varieties.—J. L. B.

[We have a reply from "A Kitchen Gardener" to "A Yorkshire Cabbage Grower." It is short and sweet, but cannot be inserted this week.]

ROYAL HORTICULTURAL SOCIETY, CHISWICK.

Fruit and Vegetable Committee.—A meeting of this Committee was held on the 21st inst. at Chiswick. Present—Mr. W. Warren, in the chair; Messrs. Howe, Cheal, Barr, Denning, Smith, Wright, Marshall, and Cummins. The following crops on trial this season were inspected:—

1, *Potatoes.*—A collection of eighty-six varieties being grown. With very few exceptions they were found to have suffered severely from the disease, the early varieties more especially so. The following varieties proving to be good croppers and of fine appearance were subjected to the test of cooking—viz.: Governor (Dean), Lavington Conqueror (Lye), Epicure's Delight (Smith), Vegetarian (Dean), Renown (Webb & Son), Débûtante (Ellington), Castle Morton (Collins), Nelly Blue Eyes (Dean), Basford Beauty (Howard), Bluebeard (Dean), Purple Beauty (Dean), Stirling Castle (Murdoch). None of them was considered of superior quality, being somewhat watery, a result attributable to the excessively wet season.

2, *Cabbages, spring sown.*—A collection of forty varieties. The following were selected as the most desirable varieties to cultivate for use at this season—viz., Early Etampes (Vilmorin), Early Paris Market (Vilmorin), Leeds Market (Rutley & Silverlock), Prince's Nonparcil, Early Dwarf York.

3, *Tomatoes.*—A collection of fifty-two varieties grown in pots. None or these were considered superior to sorts certificated in 1887, and now in general cultivation.

Floral Committee.—A meeting of this Committee was held on the 24th inst, Mr. H. Herbst in the chair. Present—Messrs. Walker, Dean, Laing, Noble, Goldring, Masters, Lowe, Hibberd, Rollett, Bates, Dominy, Fraser.

The collections of Stocks and Asters on trial in the gardens were examined. Of the large-flowering Ten-week Stock from Messrs. Vilmorin the following colours were selected as the most distinct, and awarded three marks—viz., white, sulphur, lilac, blood red, violet, light violet. Of the same section from Messrs. Benary the white, dwarf

white, brick red, and light blue received three marks; also of the Dwarf German Chamois and those of the new Giant Perfection (Benary), sulphur yellow and light blue, received three marks, and the dark blood red from the Novelty Company.

Amongst the Asters the following received three marks. Half dwarf: Multiflora, white; ditto, light yellow (Vilmorin); Globe Pæony-flowered, copper coloured, white edge (Vilmorin). Dwarf: Chrysanthemum, rose (Vilmorin); and ditto, scarlet red (Vilmorin); Dwarf Queen, crimson (Benary); Dwarf Queen, white (Benary); Mignon (Benary). Pyramidal: Hedgehog or Needle, dark crimson (Benary); large flowered rose, dark scarlet (Benary); Triumph (Novelty Company). The following assortments of various colours from Benary were commended—viz., double dwarf, early flowering, fourteen vars.; dwarf bouquet flowered (Boltzes), eight vars.; dwarf Chrysanthemum flowered, ten vars.; dwarf pyramidal flowered, twelve vars. The later varieties will be further examined.

THE COLD STORAGE OF FRUIT.

It will be remembered that the Royal Horticultural Society, desirous of ascertaining the practicability of preserving soft fruits under the influence of cold, appointed a Committee to conduct experiments in co-operation with Mr. D. Tallerman of the Leadenhall Cold Storage Company, whose cold chambers were obligingly granted for the purpose in question. The Committee met on Thursday last at the Company's offices in Gracechurch Street, T. Francis Rivers, Esq., in the chair. They had both a warm and a cold reception, for it was necessary to linger in the engine house in a temperature of 90° or more till preparations could be made for further progress, and then pass into very snowy surroundings. It was a change from the torrid to the frigid zone in a moment, and not an experience for persons in delicate health. The cold in the three rooms was reduced by steam to about 36°, 25°, and 22°. Several half-bushel baskets of Cherries were placed in the chambers on August 8th, wet, and some of them decayed. Some were frozen like marbles, others were abnormally firm, but not actually frozen, others remaining soft. Those that were not frozen were in the same condition as when stored fifteen days previously, and those that were decayed then had not in the slightest degree communicated decay to others pressing against them. Those in the coldest freezing chamber were spoiled. Soft fruits must evidently not be frozen, and the point to determine is the amount of cold that suffices to arrest fermentation, and this settled, it is not unlikely that soft fruit can be kept for some weeks or months. Various kinds of fruit will be tried under differing conditions in the hope of acquiring information of substantial value.



NORTH AMERICAN ORCHIDS.

Most of the Orchids indigenous to the United States of North America are hardy in this country, and several of the Cypripediums constitute the most showy of the Orchids grown out of doors here. A writer contributes an interesting article on the plants to "Vick's Magazine," and from this we take the following notes:—

The Showy Orchis, considered by late botanists our only true Orchis, and Putty-root, are known to me only by reputation. Orchis grandiflora and O. orbiculata, the Habenaria or Platanthera fimbriata and P. orbiculata, of Gray, are likewise strangers. Cypripedium acaule was a friend of my Massachusetts school days, growing in the edges of Pine woods, but I have never found it here, perhaps because there are no Pine woods. Careful search in a swampy woodland was rewarded with Cypripedium pubescens and C. parviflorum, much alike in general appearance; the latter smaller, with deep yellow fragrant flowers, while those of C. pubescens are scentless.

In late summer a patient tramp through bush and briar in the same woods may be rewarded with the lilac spray of Habenaria psycodes, the smaller Purple-fringed Orchis, an exceedingly beautiful plant, which has a provoking trick of disappearing from its home when that has been discovered. I have found it growing in its delicate beauty, plucked the flower stem carefully not to injure stalk or root, taken the bearings of trees and under-shrubs, returning the next summer to search for rods around in vain. It had disappeared as completely as the Tulip bulbs I used to plant in the garden in the fall did by spring. The blame in the latter case was laid to ground moles. Did some ground mole or field mouse serve Orchis roots as a dainty at some winter festival?

The Ragged Orchis, Habenaria lacera, with yellowish-green flowers, is not unlike H. psycodes in appearance of plant, though quite inconspicuous as to blossom. But to a victim of the Orchid mania beauty of colouring is not an essential feature of a plant's claim to regard. We admire it for its grotesqueness, its curious arrangement of parts, because it is unlike anything else—in short, because it is an Orchid. This Ragged Orchid I have found without very much trouble in wet meadows and pastures in late summer. The "intervales," or hollows in the wet meadows that are skipped in the mowing, are often treasure gardens of flowers in late summer. The mowing cuts off so many stems before they bloom; some send up a feeble growth and a few flowers later, many give up the attempt for the season.

In similar places grows Spiranthes cernua, which is plentiful enough to gather by handfuls, the only Orchidaceous plant I am inclined to call common, from my experience, unless I except Goodyera pubescens, though on some hillsides and in hedgerows Spiranthes gracilis is not rare. Both are called Lady's Tresses. The most noticeable difference between them is that the flowers in S. cernua are in three ranks or rows on the spike, while those of S. gracilis are in one spirally twisted row. The leaves of S. gracilis commonly wither away before the flowers open, leaving the prim little stalk standing stiff as if in a child's play garden, where the flowers are but blossoms pulled and stuck in the earth.

One of the handsomest of our members of "the royal family" is Calopogon pulchellus. It scarcely has a common name. Wood mentions "Grass Pink," but that is misleading, and is frequently applied to a far different plant. I first met it on a warm day of early summer, the pink-purple blossoms seeming to float in the air as the wind swayed their delicate grass-like stems. A certain bog pasture supplied these floral butterflies for some years with tolerable regularity, but for some years past I have failed to find them. It may be I did not time my visit aright, and hours of careful search when not in bloom would hardly reveal their slender stems amid the lush growth of midsummer.

Among my relics of school days is a pressed plant of Pogonia ophioglossoides, earlier and paler than Calopogon, which it yet resembles considerably. I found it then in a moist hollow in an old pasture, but a patient search in similar spots in this locality has never been thus rewarded.

Goodyera pubescens and Corallorhiza are not infrequent in the woods where the Yellow Lady's Slipper grows. The leaves of Goodyera are so peculiar that the plant can be easily recognised at any season of the year. It is the most conspicuous of our plants with mottled foliage. The nearest approach to it that I know of is Hieracium venosum, Rattlesnake Weed, often seen in our woods and hillsides. That has root-leaves veined and mottled with purple, but it has not the exquisite lace-like appearance of Goodyera. Corallorhiza multiflora is the only species of Coral-root I know of in this section, but they are much alike. The writer of the article published in January wonders why most plants destitute of green herbage wait for the late summer. If they are, as generally supposed, root parasites, fastening their roots to those of other plants, and drawing thence the nourishment for their strange growth, it may be a provision of Nature in order that the nurse plant may not have the drain on its vitality till its own season of most rapid growth is past. I do not wish to say that such is the solution; some of the Broomrapes flower in spring, but the trees on whose roots they appear to feed are not likely to feel the loss of sap enough to support such pigmy dependents. The only one of these "royal" neighbours I have ever attempted to domesticate is Goodyera pubescens. It failed to survive the winter, perhaps for lack of the warm coverlet of leaves the autumn wind tucks so neatly over it in the hollows of its native woods.

CONFERENCE OF FRUIT GROWERS AT THE CRYSTAL PALACE.

A meeting of the Executive Committee of the above Conference was held in "Anderton's Hotel," Fleet Street, on Tuesday last, August 28th, T. Francis Rivers, Esq., in the chair. The principal business was the consideration of a number of communications received by the Hon. Secretaries, Messrs. Lewis Castle and Wm. Earley, offering papers and suggestions, and the determination of the programme for the Conference. The Committee now comprises about seventy of the leading fruit growers, nurserymen, and amateurs throughout the kingdom, all of whom had expressed their hearty approval of the scheme, and their desire to assist in rendering the meeting both useful and interesting. After considerable discussion it was decided that the subjects should be taken in the following order, each paper to occupy about twenty minutes in reading to allow ample time for discussion. The Conference will be held in the Crystal Palace (the place will be notified on the morning of each day) on September 7th at 3 P.M., and September 8th at 2 P.M. On September 7th the first subject will be "Fruit Culture for Profit," by Francis T. Rivers, Esq., to be followed by Mr. Coleman, Eastnor Castle Gardens, and others. The second subject will be "The Packing, Carriage, and Marketing of Fruits," by Mr. Webber of Covent Garden and Mr. Samuel Rawson of Birmingham. On September 8th Mr. Tallerman will deal with "Fruit Distribution," Mr. Manning with "Fruit as Food," and Mr. Albert Bath with "Land Tenure in Relation to Fruit Cultivation." All who intend taking part

in the discussion will facilitate the arrangements if they send in their names to the Hon. Sees., Mr. Lewis Castle, South Wimbledon ; Mr. Wm. Earley, Ilford ; or to the Chairman on the day of the meeting.

CULTURE OF EUCHARISES.

The Euehaiis plants here have been subjeet to the disease for some time. No special experiment was tried to eradieate it, only what I should eall careful treatment. To eommenee with, all the plants early in January were turned out of their pots, and the bulbs were dipped into Fir-tree oil. A seleetion was then made, plaeing all the large bulbs together, and these and the small ones being potted separately. The eompost given consisted of good fibrous loam, the soil being well shaken out, a liberal dash of coarse sand, charcoal, and soot. Pots 12 inehes in diameter were employed, carefully drained about one-third of their depth, putting about a dozen large bulbs in a pot, the small ones more ; these were potted firmly, taking care not to bruise the bulbs.

After potting a little bottom heat was necessary to assist them to make fresh roots and growth. A little fermenting material was plaeed in the Cueumber house, in whieh the plants were plunged when the temperature deereased to about 90°. In this position they remained for about ten weeks, attention being paid to the shading and the supply of tepid water. When removed they were not shifted directly from the plunging material, but the pots were lifted, the bed levelled, and then replaeed so as not to give any eheck after the strong bottom heat, but gradually hardening the plants to the house temperature ; from this they were taken to the stove.

The system of resting that is greatly praetised in many places is to remove the plants from the house where growing to a lower temperature, keeping them dry for five or six weeks. I have seen plants lose their roots and fall into ill health through this praetiee. Here the plants remain in the same temperature as when growing, keeping them dry for a month or so, but never allowing the soil to beeome dust dry. The culture as mentioned has proved most satisfactory, some of the plants being now 4 feet in diameter and earrying nine and ten large spikes of flowers, few traces of disease being left.—Foreman, *Besborough, Cork.*

PITS FOR MELONS.

Two correspondents write to us on the same subjeet, but neither of them appears to know exaetly what he wants ; one plainly indicates that he does not, and the other simply asks for a plan of a Melon house without saying anything about its shape, whether span-roofed or lean-to. Pits appear to be coveted in which Melons ean be grown in summer and plants preserved in winter or foreed in early spring. All we ean do in such a case is to give our friends a choice of three plans—a lean-to pit, a half span, and a full span, leaving them to selcet the one that may be deemed the most suitable.

Fig. 20, prepared by Mr. E. Luckhurst, shows sections of three houses : A, a snug little lean-to—propagating, Melon, or Cucumber house. B, a semi-span, possessing all the advantages of A, with the important additional one of a stage for stove plants and Orchids ; or it could be turned to aecount for a variety of useful purposes, especially the early forcing of Roses, flowering shrubs, such as Deutzias, Weigelas, Lilaes, as well as Lily of the Valley and bulbs, or for wintering bedding plants. This house would also answer admirably for Vines in pots and Kidney Beans. C Shows a section of a loftier elevation—a lean-to, forming the most simple style of vinery as well as the most effieient. Sweep away all internal fittings—the stage, the inner wall, the soil and rubble ; put plenty of pipes near the floor, not on it, but just elevated a few inches upon pipe stands, so as to turn all the heat to account and let none of it be wasted by absorption into walls and floors, as is too often the case ; pierce the front wall and plant Vines in the soil, and we do not see what more a skilful Vine-grower would require, or what advantage a more elaborate state of

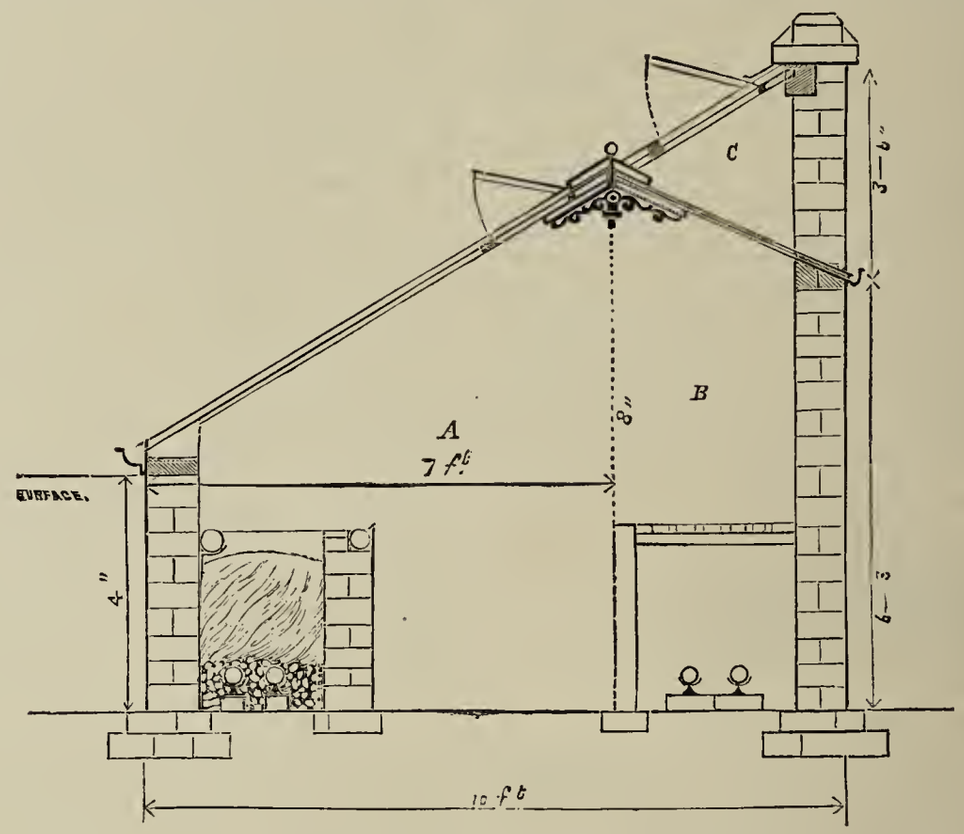


Fig. 20.- Combined section of propagating pit, melon house, and vinery.

things would confer upon a non-skilful one. Leaving, however, the vinery out of the question, the semi-span roofed pit would be excellent for Melons.

We now reproduce a pit from a plan of Mr. R. Inglis (fig. 21), and eite his remarks thereon :—

"In the erection of pits, the eonservation of heat by the means of 'mother earth' is very often under-estimated, if not ignored altogether. I think there is nothing we ean do with more advantage to our plants than endeavour to have them rather under ground than above it. The further a house or pit is raised above ground the more it eatches the bitter blast in winter. The roof we must have exposed ; but why have the walls also exposed, when they can be built for less money, and heated at less cost afterwards, by having nothing exposed to the elements but the glass roof ? And not only is it of advantage in heating in winter, but it is of great advantage in the maintenance of more genial moist atmosphere in hot dry weather in summer, as everyone can testify who has had experience of such pits, or given the thing serious consideration. For a range of useful pits I would suggest something like what is represented in the accompanying section. Supposing *a a* to be the ground line, mark off and level the soil where the outside walls are to be, and run it hard so that there is no chance of its sinking. On this build your outside walls, placing at intervals of 6 or 8 feet under the wall a right-angle elbow 3-inch sanitary pipe, socket end up, as shown at *b b*. By placing three bricks on edge round its end and breaking off the end of the brick just above this pipe, a connection with the inside of the pit is secured. Another pipe, placed in the socket at *b*, will rise above the eaves of the pit ; and to prevent wet entering, a tin or zinc cover can be supported 3 inches above the pipe by three pieces of stout wire, to fit inside the sockets. These will form ven-

tilators which may in most cases be left open, except in severe weather; but when desirable to have them at command, a small shutter to each inside can easily be applied. When the mortar is sufficiently set, the spaces between the walls *d d* and also *e e* may be filled up with the soil excavated for a footpath *c*, building a wall on each side in the usual way. The space between the pits should be in the form of a gutter, asphalted, and made to carry the water to tanks inside the pits. These gutters should be 18 inches or 2 feet wide, and if the ventilators are placed alternately there will be plenty of room for cleaning out, attending to shading in summer, or applying mats or other coverings in the winter. A drain-pipe under the ashes in the beds will carry part of the water (otherwise wasted) back to the tanks. The inside arrangement of this pit is specially adapted to the growing of decorative plants of dwarf growth, such as Cyclamens, Primulas, Cinerarias, Bouvardias, Achimenes, Begonias, Poinsettias, and dozens of other plants, which will do far better than in houses of any other description. But with a little modification of the arrangements it can be made equally suitable for propagating, forcing winter-flowering plants, growing pot Vines, Melons, Cucumbers, Tomatoes, &c.

"The great objection to these sunken pits is the necessity of having steps down to the doorways. This, however, is not always necessary. If they are built on sloping ground they may be so arranged as to be wholly under ground, except the ends in which the doors are placed. In such a case the end walls would have to be built first, the mean height of the soil ascertained and levelled in the same way as you would form a terrace, and upon this level, properly consolidated, commence to build as on level ground. In building a number of such pits a large tank should occupy the opposite end to the door, and these should not only be connected with each other, but should be made one tank, so that the water will run direct from the gutter into it. In every such tank a flow-and-return hot-water pipe should be placed, for the use of cold

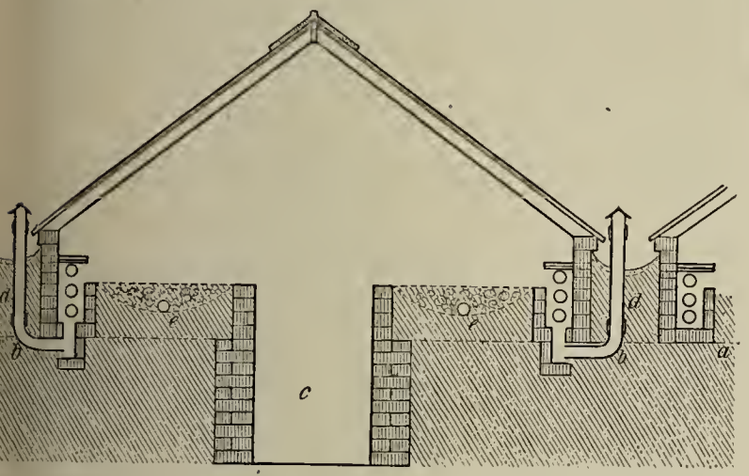


Fig. 21.

water in watering plants works untold mischief wherever it is applied in heated structures."

For growing early Melons and Cucumbers it would be desirable to make larger excavations at *e e*, down to the floor line, providing two pipes for bottom heat as in fig. 20, in rubble, with soil above them for the plants. With sliding shutters in the wall any excess of bottom heat might pass into the house or pit, then two pipes instead of three would suffice for top heat, in a sunk pit of the kind shown, 8 feet from the floor to the ridge, and 10 feet wide. Top ventilation should be provided as in the preceding plan, fig. 20; in the sunk pit the bottom ventilation is admirably devised, as the cold outside air in spring must be warmed before it reaches the plants.

POISONED BY BUTTERCUPS.

A CORRESPONDENT sends the following note clipped from a daily paper, and desires further information respecting the poisonous properties of Buttercups:—"Farmers in Bedfordshire are at present feeling considerable anxiety in consequence of several horses and other animals having died in a manner which suggests the belief that they have been poisoned through eating some noxious plant. Two horses belonging to Mr. Wm. Gray of Mill Street, Gamlingay, which were grazing in a meadow on the farm, were suddenly taken ill, and both succumbed in a very short time. A veterinary surgeon on examining the bodies found that where some partially digested food lay the coating of the stomach was covered with blisters as if from the effect of some vegetable irritant. Two valuable cows were also lost from Warcsley Park, it is supposed from a similar cause. Suspicion attached to a variety of Crowfoot which during the late rains has largely increased in growth in boggy parts of the meadows. Several specimens of this plant were forwarded to the Botanical Secretary of the Bedfordshire Natural History Society (Mr. J. Hamson), who has come to the conclusion that the plant which has poisoned the animals is the Lesser Spearwort (Ranunculus flammula), a very poisonous variety of Crowfoot. It is rather uncommon, but the wet season seems to have been favourable to its development."

The appended particulars are given in Dr. Hogg's "Vegetable Kingdom" concerning the active qualities of the British species of Ranunculus:—"Of the Ranunculeæ, R. bulbosus, acris, sceleratus, flammula, auricomus, thora, arvensis, and many others, have very powerful acrid properties; and their fruits, when green, appear to be the parts in which this acridity is most intense. If the fresh-bruised leaves are applied to any part of the body a more or less active inflammation will soon appear, followed with hard swellings, which will speedily become a true blister. Recourse may therefore be had to these plants, as is the case in Norway and the Highlands of Scotland when cantharides cannot be obtained, or when the irritant action of these on tender plants would be injurious. Taken internally, the juice or extract of Ranunculus acris causes an intense inflammation of the digestive organs, and if the dose has been considerable it is a true acrid poisons followed by very serious results, and even death. The juice of R. bulbosu, applied to the nostrils causes sneezing, and a portion of the root has been found to act beneficially on the gum of an aching tooth. Haller informs us that the Swiss hunters chew R. alpestris as a restorative after fatigue, and as an antidote to giddiness; and Withering states that in the case of poison having been taken, R. flammula, which produces instantaneous vomiting, is preferable to any medicine. With the juice of R. thora the Swiss hunters were wont formerly to poison their darts, by means of which the wounds inflicted on wild beasts were speedily fatal and incurable. The distilled water of R. sceleratus is eminently acrid, and when cold deposits crystals, which have been found to be utterly insoluble, and of an inflammable nature; yet, notwithstanding its poisonous properties, it is eaten when cooked by the shepherds of Wallachia. R. aquatilis forms an exception to all just mentioned, having been found to be not only innoxious, but nutritious to cattle. Dr. Pulteney says that in the neighbourhood of Kingswood, on the borders of the Avon, cottagers support their cattle almost entirely on this plant. They collect a quantity every morning, and bring it in a boat to the edge of the water, where the cows eat it with great avidity. One man kept four cows and one horse so much upon it that they had not consumed more than half a ton of hay throughout the whole year. There is no doubt that the continued immersion in the water is the cause, as we have already stated, of the destruction of the acrid principle in this plant. R. repens, or Buttercup, has less of the acrid quality than most of the genus, and is said to be eaten as a potherb. Cattle, however, do not feed on it willingly, and yet in many grass fields it makes a considerable part of the pasturage. Ficaria ranunculoides is also less acrid than some of the others; but although its leaves are used as a potherb when cooked, yet its roots are acrid and bitter. It is said that wood pigeons eat the root with great avidity, and its growth is sometimes encouraged in the vicinity of gardens to prevent their depredatio s in winter."

HAMPTON COURT GARDENS.

In such a peculiar season as the present one horticulturists will not expect to see any brilliant displays in the metropolitan parks, and the majority of gardeners have had a somewhat doleful experience of conventional "bedding-out" defects in a wet summer. Zonal Pelargoniums, say the county reports, are extraordinarily vigorous in growth and foliage, but the flowers are scarce, and with few exceptions this corresponds with what we have seen. Such beds, when devoid of flowers, have a poor appearance, and those flower gardeners who have not relied exclusively upon Pelargoniums to furnish the colour considered requisite in some gardens have gained materially by their precaution. Pelargoniums are of unquestioned usefulness, and they can be employed with excellent effect in moderation; but where beds of dazzling scarlet are provided too liberally the result in hot sunny weather is at least fatiguing and often nauseating. It always seems strange that we should have in our gardens an array of the brightest colours at a time when the eye needs rest and finds the greatest relief in the fresh green turf or varied green tints of trees and shrubs. Probably this is one reason why carpet bedding has been extended so much of late years; its softer colours afford an agreeable contrast to those of the Pelargoniums, and when the designs are not too intricate or laboured such beds are welcomed for the diversity they provide. Certainly this season nothing can be urged against them on the score of excessive brightness, for the Alternantheras, upon which the effect of these beds is mainly dependent, have refused to assume their usual tints. A amœna, A. versicolor grandis, and A. amabilis have until quite recently had an uncommonly dull appearance, the only ones which seem to have profited by the frequent rains being the golden varieties of A. paronychioides.

At Hampton Court we always look for excellent representations of the carpet bedding style, as the superintendent, Mr. Graham, has made it a special feature for some years, and this season visitors will not be disappointed in the designs, although the colouring is necessarily deficient. A few of the most effective beds may be briefly noted, but it is difficult to convey an accurate idea of these designs by mere verbal descriptions. As a groundwork plant Herniaria glabra is largely employed, and though this looks particularly well in bright weather when the Alternantheras are in their true character, it is a little too dark and dull in a season like the present. The Leucophyton also has not grown so freely as usual, and consequently some of the lines are rather thin. The dark Iresine Wallsi takes the place of Alternantheras in one or two beds with evident advantage, its rich dark foliage contrasting capitally with lighter leaved plants of the Mesembryanthemum or Leucophyton character; it requires, however, to be kept closely pinched. The grey

leaved Veronica incana is freely employed as a groundwork plant with good results, but the Mesembryanthemum cordifolium variegatum looks the best, having both grown and coloured satisfactorily. Echeveria Peacocki is one of the Hampton Court specialities, and is in admirable condition, the ordinary Echeveria secunda glauca and Sedum glaucum with a few other succulents, appear much better than might have been expected.

The majority of the carpet beds are oblong in form, and of so large a size that only bold, well defined designs and close planting can render them satisfactory; a multiplicity of minute panels would have a very disappointing effect, as indeed they do in most cases. One good design consists of a series of S-like scrolls in the centre of Alternanthera paronychioides major upon a groundwork of Mesembryanthemum cordifolium variegatum, with seven small alternate circles of Leucophyton and Alternanthera versicolor grandis. On the outside of this are bands of Herniaria and Alternanthera paronychioides, and scrolls of A. magnifica, with Mesembryanthemum, also on a ground of Herniaria. The edging is of Echeveria secunda glauca and Sedum glaucum. Another carpet bed of similar form has a centre of Echeveria Peacocki, surrounded by bands of Mesembryanthemum, at each side being harps of Alternanthera versicolor grandis on a ground of Leucophyton, three "strings" being formed of Alternanthera aurea and two of A. amœna. The corners of the bed are filled with Alternanthera aurea, which has coloured remarkably well, panels of A. amœna and crescents of A. purpurea being employed in the same bed. This is effective, but there is a little too much artificiality in the design to please some tastes. In a third bed is a centre of Pachyphyton roseum, surrounded by bands of Abutilon vexillarium variegatum, two bold crescent-like panels being placed on each side of the centre of Alternanthera versicolor grandis, which has assumed a fairly rich colour. The principal groundwork is of Herniaria, the ends of Mesembryanthemum, with panels of the Golden Alternanthera, Echeveria Peacocki, a few small circles of the dark Iresine Wallsi, and scattered plants of E. metallica glauca.

But the flower garden attractions of Hampton Court do not rest exclusively upon the carpet beds, as numbers of large and small beds are occupied with "mixtures," "combinations," "harmonies," or "contrasts" to suit the fancies of all. The system of associating several different kinds of plants in one bed, not in formal quadrangular figures or hard angular designs, but freely and naturally, has extended greatly in recent years, and as carried out in the London parks it has proved reliable when other systems have failed. It presents a wide range for the exercise of ingenuity in forming fresh "combinations," and there is practically no limit to the variations that can be introduced. In the absence of these beds the garden this year would have had a much duller appearance.

One of the "mixtures" that looks well comprises Salvia patens, Abutilon nævium maculatum, and a dwarf Tropæolum, edged with Iresine Wallsi. Near this is a bed of Petunias, Iresine Lindeni, and Acer Negundo variegata pegged down, the whole edged with Abutilon vexillarium variegatum. A third includes Pelargonium Henry Jacoby, bordered with Golden Harry Hiever and Viola Tory mixed. Another of a similar character has Pelargonium Amaranth in the centre, with a broad mixed border of Pelargonium Mrs. Pollock and Viola Tory, edged with variegated Alyssum. A handsome mixed bed is formed of the variegated Pelargonium Manglesi and dark blue Violas, bordered with Iresine Lindeni, most effective and beautiful. Larger beds of standard Roses with the ground carpeted with Heliotrope, or of dwarf plants of Rose Souvenir de la Malmaison mixed with Pelargonium St. George also attract notice. Similar ideas are followed out in many other beds, though there are also some of the ordinary "massed" beds of Pelargoniums, and amongst these Henry Jacoby is far and away the best, being in fact almost the only Zonal Pelargonium which has endured the wet season satisfactorily.

The borders of herbaceous plants are gay Phloxes, looking especially well, and Bocconia cordata has flourished surprisingly. Other conspicuous plants are Helianthus multiflorus, Lilium auratum, the yellow Achillea ægyptiaca, with Clematis Jackmanni on the walls. It is almost needless to say that the gardens are kept in the admirable condition which has so long marked Mr. Graham's superintendence.

COMMERCIAL FLORICULTURE AND AMERICA.

[Read before the Massachusetts Horticultural Society by Mr. W. J. Stewart of Boston.]

THE whole history of commercial floriculture in this country is progress—progress so rapid and so remarkable that it seems almost incredible. What is commercial floriculture? What is a florist? So great has been the development in all lines of business connected with the introduction, culture, and sale of floral productions that our language even has not kept pace with the business; and so we find a great combination of industries for which we have no distinctive or generally accepted names. Thirty years ago, when one spoke of a gardener or a florist everyone knew what was meant. What is a gardener now? Who are the florists?

I am sure that if I were to confine this essay to a narration merely of the progress in the culture of flowers for commercial purposes, I should not be fulfilling the duty expected by your Committee. They desire also to hear something about the great modern marts, where cut flowers are distributed, arranged, and sold, and which a few years ago did not exist. But what have those places to do with floriculture? Many of those employed in them never potted a plant, never syringed a house; many of them know as little of the details required to perfect the flowers they sell as they do of the manufacture of the wire and tinfoil they use, or the baskets they fill, yet they occupy an important place in the florist's business of to-day. The little industry which forty years ago was only in the embryo state has during the past twenty years made such strides, and its present rate of growth is so great, that it looks as though the future will have to coin new words if it will keep up with the florist's trade.

The commercial idea, this trading in cut flowers by the dozen or hundred, I am well aware is an unwelcome subject to some well-meaning people. I recall a conversation with a gentleman whom you all know, and whose fame as a botanist is world wide, in which he made some inquiries regarding my employment, and I shall never forget the look of disgust which overspread his face as he said, "Yes, yes, peddle them out so much a barrel, just as you would Potatoes." There are doubtless many people who agree with him; they grow a flower for itself, they say, and not for its value in dollars and cents. But where do our most beautiful flowers, our most luscious fruits come from, and whom shall we thank for them? They are in many cases, no doubt, primarily the result of the labours and studies of men who have done the work for the love of it alone; but had it not been for that ever-present and all-powerful element in human nature, the desire for gain, and the energy and enterprise begotten of business methods, these prized results of love's labour would have stayed in the spot where they first saw the light, in the possession only of their originator or his immediate friends, and the millions who have enjoyed them would have never known that pleasure.

In these latter years, however, some of our most earnest students of plant life, and of methods of fertilisation and propagation, those who are striving hardest to discover or to produce new varieties, are not amateurs, nor are they enthusiasts, working solely for love of the work, but they are men who know the value in hard cash of anything meritorious. The spirit which has spanned the Continent with railways, and covered it with a maze of telegraph wires, which lines our streets with magnificent buildings and tasteful stores, and which has thrown the treasures of the whole world at our feet, is the same identical spirit as that which animates and spurs on our great hybridisers and rosarians, and which ransacks every corner of the earth, braving the dangers of the wilderness and the pestilence of the tropics in the great quest for something new or rare.

The florist of a generation ago was in most cases a rather humble and obscure individual. He was generally a man who was employed by one or several parties to keep their grounds in order, and occupying as he did a station socially about on a plane with the coachman and ostler he was expected to be as expert at milking the cow and wheeling out the ashes as he was at tying bouquets. His hothouses were of the crudest pattern; small, inconvenient, poorly heated, and set with but little regard to fitness of location or aspect. Our modern devices for heating, ventilating, and propagating were unknown to him, and he was as innocent as a child regarding the much-discussed questions of the comparative merits of hot water and steam, theories of circulation and radiation, and many other problems that interest his more fortunate brother of the present day. His stock of plants was more of a museum than anything else, and occasionally it was mainly a hospital. The hospitals in some instances are unfortunately still to be found. His bouquets, if we could see them now, would be regarded as curiosities. With a stick in the middle to keep them straight, and the flowers wound on as tightly as they could be packed together, they were indeed marvels of workmanship. About the only designs attempted besides bouquets were wreaths and a few crosses. These were fashioned on sticks or hoops.

(To be continued.)



ROSE CLARE CARNOT.

I CAN only remember one instance in which any correspondent has brought the claims of this Rose before the readers of the Journal, and yet for a late blooming variety we have no other that is so generally satisfactory. Being of a rambling habit we allowed it to have pretty much its own way as to how it will grow, only cutting back when personal comfort or the well-being of a neighbouring plant necessitates it. Its clean growth is particularly pleasing, and the truss of bloom which terminates each shoot rivals the more popular W. A. Richardson in delicacy of shape and depth of colour. Coming into bloom just as most other Roses are waning is a point in its favour which ought not to be overlooked. Though by no means suitable for exhibition, it worthily deserves a place in every Rose garden.—M. D.

AUTUMN ROSES.

IT is said the wood of plants and trees must be ripe to ensure floriferousness, and that much sun is essential for the maturation of growth. This year we have not had much but little sun, therefore the wood of Roses cannot be so ripe as is usual at this season, and consequently we ought not to expect such a good autumn bloom as usual; yet I have seen very fine stands of Roses at flower shows during the past

week, and the few trees in my garden are flowering very well. What is the condition of Roses generally? Information respecting the best autumn bloomers would be acceptable.—L. PAGE.

ROSE SPORTS.

MR. W. R. RAILLEM'S article in your number for August 23rd induces me to forward a curious case of duplex variation in a Rose, Countess of Oxford, which has already been the parent of two sports new in commerce, Pride of Reigate and Pride of Waltham.

About seven or eight years ago a small shoot appeared on one of my plants differing most remarkably from the normal form. The leaves were mottled and veined with yellow, and the flower, instead of the dark red proper to the Rose, to which it belonged, was striped pink (not red as in Pride of Reigate) and white. It was irregular in shape, and the ends of the petals ragged, owing to the white portions not advancing in growth proportionally to the pink. In itself it was worthless, but out of curiosity, and to see whether it might improve, I inserted the only two buds I could get into good Briar-cutting stocks. They took, but the flowers did not improve, while the growth remained dwarf, only the leaf variations disappeared.

This went on for five or six years, and the plants would have been taken up, but that they stood in a corner which was not especially wanted. In 1886, however, I was surprised to see a very much stronger shoot, which in due time produced a Rose differing entirely both from the original and first sport. This I have propagated, and it has come true up to the present time. The flower is a brilliant pink flesh colour, brighter and better (in my possibly partial judgment) than Pride of Waltham, a vigorous grower, but different from Countess of Oxford, more bushy, and with a greater tendency on the part of the flowers to come in clusters.

It has not as yet been seen in public, but I hope to submit it to the judgment of my friends next summer. In the meantime I think that the various complications in flower and growth in this duplex sport are worthy of attention.—DUCKWING.

THE WEATHER AND GARDEN CROPS.

WE have received more communications than we anticipated in response to our invitation, and a few more remain to be published; our correspondents are thanked for the attention they have given to the subject.

BERKSHIRE.

I CANNOT give you the exact quantity of rain that has fallen in this district of late, but it has been much above the average for June and July. Garden crops, such as Peas, have run to haulm too much, and the pods would not fill. It suited Celery, Carrots, and other winter vegetables.

Bedding Pelargoniums have scarcely any flowers; Heliotropes are flowering freely, also Lobelias, Verbenas, herbaceous Phloxes; the scarlet Lychnis, Antirrhinums, and Pinks, have been very gay with us.

Pears are a fair crop on the walls; Apples are far below the average; Plums are very plentiful; Apricots, Peaches, and dessert Cherries under glass coping are an excellent crop, had to be thinned; Morello Cherries are above the average.—CHAS. HOWE, *Benham Park Gardens, Newbury.*

CHESHIRE.

I THINK your correspondent from Cheadle takes a somewhat gloomy view of the season now hastening to its close. The only downright failure here (two miles from Cheadle) is in Strawberries, other small fruits, especially Raspberries, being fully up to the average. Peas, Carrots, Lettuces, Onions, Turnips, and Celery are first-rate. Cabbages and Cauliflowers were rather late, as the severe winter destroyed all Cabbages unprotected, and the dry spring retarded the Cauliflowers. I cut my first Vegetable Marrows on August 16th, and have plenty more ready. Up to date Potatoes have been first-class. For the last three years I have pinned my faith to Sutton's Early Regent; it is a good early, better for second early, and better still as a keeper. In the matter of Roses I agree with your correspondent about Général Jacqueminot, but I should like to put in a plea for Marie Baumann, which has fully kept up its good reputation.—CONTANGE.

DERBYSHIRE.

THE weather in this part of Derbyshire during the month of May was very dry, with extremely cold cutting E. and N.E. winds. June and July were very wet and cold. We had two fine, bright and hot days on June the 18th and 26th. Taken on the whole I cannot remember so cold, wet, and sunless a July as that which has recently passed. Vegetation consequently was in a very backward state. Many Apple trees in this locality were covered with bloom, and as we escaped frost, there is on some trees an abundant crop of fruit. Plums and Pears are a moderate crop. Cherries, especially Morellos, good. Gooseberries, Currants, and Raspberries a very heavy crop, the fruit fine and clean, but short of flavour. Strawberries have been fairly good with us, fruit large and clean. On the whole, I think I may safely say that the general condition of outdoor fruit in this district will compare favourably with some more favoured localities.

Turning to vegetables, Peas have, till recently, proved unsatisfactory, the long continued wet weather causing an undue development of growth. Now, with finer and warmer weather I trust the later crops may be more satisfactory. French Beans and Scarlet Runners are very late; we have not yet, August 20th, gathered any outside. Potatoes are a fine crop, and I am happy to say I have not yet discovered any disease. Turnips, Carrots, Parsnips, Beet, and Shallots are very good; spring Onions are in some cases affected with maggot. Cabbage, Cauliflowers, and Lettuce have been very good. I find Veitch's Earliest of All Cabbage an excellent variety of good size and shape, and rich flavour. The same remark applies to Veitch's Early Forcing Cauliflower, which is a most useful kind for early cultivation, and their Perfect Gem Cabbage Lettuce is a gem indeed. Vegetable Marrows are late in coming in; we have, however, been cutting a few during the past fortnight.

Herbaceous plants have flowered profusely, and are making a grand show, and it is long since I remember to have seen such a wealth of blossom on all kinds of hardy trees and shrubs. There is an abundant crop of berries on the Holly this season. Should fine weather now happily continue I think we shall have cause to be thankful; the abundant supply of rain has indeed been a great boon to many farmers and gardeners on the steep limestone hills of North Derbyshire.—WALTER G. GAIGER, *The Gardens, Burton Closes, Bakewell.*

DEVONSHIRE.

THE weather here has been very unsettled, especially during July, with a considerable rainfall, and frequently accompanied with dense fogs from the sea, doing damage to tender foliage. The Purple Beech, Golden Oaks, and some of the Coniferæ have the appearance of having been burnt. H.P. Roses have lost their foliage completely; of German and Ten-week Stocks the flowers have decayed; on the other hand I never saw the mixed borders more gay in August. Herbaceous Phloxes, Zinnias, Clarkias, Carnations, Dahlias, both single and double, are all that one can desire. The Gladiolus are healthy and strong, just showing their flowers All vegetables have grown unusually strong. The late-sown Peas have suffered from mildew to such an extent that they will be worthless. The Tripoli Onions grew to a larger size than I ever saw in any previous year. The spring-sown Onions will be thick in the neck, consequently the bulbs will be inferior. Potatoes are now badly diseased; the crops are very heavy; the fine drying winds we are having may do something to arrest the disease.

On reference to my weather table I find the following results:—June, seventeen dry days, and more or less rain fell on the remaining thirteen days, 3·16. July, seven dry days, and rain fell on twenty-four days to 5 28. The temperature was unusually low. On June 14th the lowest temperature was 34°, the highest was on June 23rd, 77°. On July 8th the temperature was 72°. The coldest night was the 17th, 39°. The rain gauge used is 5 inches in diameter.—GEO. BAKER, *Mamhead Gardens, Plympton, S. Devon.*

DUMFRIESSHIRE.

THE weather here during the month of June was very unseasonable. The sun being strong during the day with cold north-east winds, often a low temperature at night. On the 5th of June we had 7° of frost, and on the 30th 2° of frost. Mean temperature for the month 52·36°, hours of sunshine 186, rainfall 1·97 inch. The corresponding month last year, mean temperature 57·9°, hours of sunshine 238, rainfall 0·68 inch.

July of this year all through was dull and showery, only nine days without rain. We had 3° of frost on the 1st, 3° on the 8th, 2° on the 11th, and down to freezing point on the 31st; rainfall 4·54 inches; mean temperature 53·42°; hours of sunshine 81. The corresponding month last year: rainfall 5 34 inches; mean temperature 59·2°; hours of sunshine 155.

Garden crops and outdoor flowering plants made little progress during June, especially the bedding plants. After the first week of July vegetables made rapid progress. Most notable amongst vegetables were Peas, Cauliflower, Brussels Sprouts, Cabbage, Borecole, Onions, Potatoes, Turnips, and Celery.

The bedding plants that have done best are Calceolarias, Begonias, and Lobelias. Pelargoniums, although growing pretty well of late, are deficient in bloom. Sweet Peas, Ten-week Stocks, Chrysanthemum segetum, and Chrysanthemum Dunnetti. White Candytuft, Saponaria calabrica, and Tagetes are flowering well. Asters, Senecio elegans, and Antirrhinums are promising well, but not in flower. Dahlias, both double and single, are only coming into flower. Herbaceous Pyrethrums, Pinks, Delphiniums, Spanish and English Irises, Spiræas, and Roses have done remarkably well.

Regarding the fruit crops, Pears are a failure this season, with the exception of Beurré Diel, Jargonelle, Beurré de Capiaumont, and Williams' Bon Chrêtien, which are carrying a moderate crop. Apples are much under average, and the only trees that are carrying moderate crops are Ecklinville, Keswick Codlin, Cellini, Stirling Castle, Lord Suffield, Northern Greening, Pott's Seedling, and Betty Geeson. Plums are a failure, with the exception of Victoria (which is bearing a heavy crop), Magnum Bonum, and Reine Claude de Bavay. Cherries no fruit on early trees. Morellos are a fair crop. Small fruits, with the exception of Strawberries, are above an average.—JAMES DICKSON, *Castlemilk Gardens, Lockerbie.*

EAST LOTHIAN.

JUNE was ushered in with a frost, which did much amount of damage, some localities suffering to a greater extent than others, but few, if any, escaped. The earlier Strawberries were rendered almost worthless, and many Potatoes damaged. French Beans also suffered, and bedding plants in some places to a serious extent. The weather throughout June was cold, east winds prevailing. July was comparatively

colder still, a greater amount of rain falling in the latter month, and the temperature on several occasions being below 40°. The June rainfall was 2·37 inches; average, 2 inches. July, 4·47 inches; average, 3 inches.

Of garden crops Potatoes are about half the weight of a good season, but the quality is good, and there is no disease; Peas are thinly podded, and do not fill; French Beans are not yet ready; Lettuces and that class of plants very fine; Carrots fine; Turnips small; of fruit Strawberries over the whole about half a crop, quality deficient; Apples a good crop; Pears fair; Apricots and Peaches a large crop, also Cherries; Plums poor; small fruits generally below the average. All, of course, are late.

Bedding plants have been extremely backward. Tender plants such as Iresines, are quite failures; Violas have done badly, Lobelias and Calceolarias doing best; Dahlias are very small and late; Pelargoniums the same; Pentstemons are very fine, also Pinks and Carnations; border Chrysanthemums healthy, though late; Delphiniums, Roses, Phloxes, Hollyhocks, and most herbaceous plants are growing well, and are firm; Gladiolus were damaged with frost, but are now looking better, we are now cutting from these; Lemoine's hybrids rather earlier than the others.

With fine weather now and later on the season may in some respects prove not so bad in the end, but with the same weather we have had matters will be very bad all round.—R. P. BROTHERSTON, *Tynninghame Gardens, Prestonkirk.*

GLAMORGANSHIRE.

THE rainfall here in June was 3·48 inches, which fell on sixteen days. The maximum temperature in the shade ranged from 60° to 76°, and the minimum from 41° to 54°. The prevailing winds during the month were from the east and west. There was a severe thunderstorm on the evening of the 25th, accompanied with heavy showers of rain and hailstones, which did some injury to fruit trees and vegetable crops. The rainfall in June, 1887, was 0·61 inch. The rainfall in July was 7·35 inches, which fell on twenty-seven days. The greatest fall was on the 7th, when we had a severe thunderstorm. The maximum temperature during the month ranged from 59° to 67°, and the minimum from 42° to 57°. The prevailing winds were from the south-west and north-west. The rainfall in July last year was 1·51 inch.

Of Apples and Pears there are very good crops, both on pyramid and wall trees. Plums are very scarce here, but good crops in some gardens in the district. Peaches a poor crop, and the trees much blighted in some places. Strawberries were a partial failure on account of so much rain during the time they were ripening. Gooseberries and Red, White, and Black Currants plentiful and good where the buds were not destroyed by sparrows. There are good crops of most vegetables, but some of them have been a little later than usual. The early Potatoes are very badly diseased in this locality, and there is not more than half a crop. Late Potatoes are much better.

Both annuals, perennials, and bedding plants have done well here; and Roses have been very fine this season, and the blooms bright in colour.

The Vines at Castle Coch are a complete failure this year on account of so much rain and want of sunshine during July, and they never promised better for a good crop than they did in June.—A. PETTIGREW, *Castle Gardens, Cardiff.*

GLOUCESTERSHIRE.

THE cold wet time we have passed through has had a most retarding influence on vegetation generally, and nowhere are its effects more noticeable than in the kitchen garden, where the crops are later than they have been for years. Peas and Broad Beans have filled slowly, but the quality has been good, although in some instances the growth has been very rampant. Kidney Beans have grown strongly, the crop being excellent, but we were unable to gather any until this month, and the Runners follow slowly. Amongst Vegetable Marrows, Moore's Cream has proved the best this season, fruiting more freely than any other variety we grow. Potatoes are a good crop of fair quality, but the disease is showing itself rather freely. Onions are strong, but bulbing slowly, and unless the autumn happens to be very favourable they stand a poor chance of keeping well throughout the winter. Broccoli and other winter vegetables are growing luxuriantly. Small fruits are plentiful, but the wet proved most destructive to Strawberries, causing a deficiency in flavour, and many to decay on the ground. A notable exception was Loxford Hall Seedling, which for the first time has been satisfactory.

Roses never looked more promising than early in the summer, but as the garden has rather a low situation the weather was too much for them, and many buds of the more tender varieties decayed without opening. The more hardy sorts did very well, being especially fine in colour. In the flower garden no other plants have flowered so freely as the Tuberous Begonias. Pelargoniums have been better than might be expected, although somewhat inclined to rankness of growth. Verbenas, Petunias, and Calceolarias made good growth during the wet weather, and are now a mass of bloom. Carnations have been late, and not so good as they usually are. Mesembryanthemums and other tender bedders have done fairly well, with the exception of Alternantheras. Iresine Herbsti has been very effective. Herbaceous plants generally have grown well, and make promise of a good autumn bloom. Ferns have had a glorious time of it, and their appearance shows how well they can appreciate such weather.—J. MACDONALD, *Angerton.*

HERTFORDSHIRE.

MOST of the kitchen garden crops have suffered more or less here owing to the continuous rain and absence of sun. In June we had sixteen rainy days, the rainfall was 3·79 inches In July we had twenty-six rainy days, rainfall 4·13 inches. Our gardens are late as a rule, the soil being very heavy, with a subsoil of strong clay. Potatoes in this district are a good crop, but the disease is very prevalent. Snowdrop is our favourite variety, the tubers of which are clean and good. Peas made an abundance of growth, but were late coming in, and filled badly; the best were Prodigy and Duke of Albany. Carrots, Parsnips, and Beet good. Onions eaten very much by the maggot.

With scarcely a fine day in July the summer bedding plants had more the appearance of October than the middle of summer, but the recent fine weather has wrought wonders. Begonias, Calceolarias, Heliotrope, and Lobelia alone seemed to enjoy the unseasonable weather. Sub-tropical and carpet bedding are badly coloured, and have made but little growth. Annuals and perennials generally I have never seen do better. The mixed borders here, which are extensive, are well filled, and are far more satisfactory than they have been in the last two seasons. Hollyhocks, which have escaped the disease here the last three years, are badly infested this season.—EDWIN BECKETT, *Aldenham Park Gardens, Elstree.*

MONTGOMERYSHIRE.

WE are quite three weeks later this year than last (1887). The rainfall of June was 3·75, seventeen wet days; of July, 5·85, twenty-one wet days. We have a good crop of small fruit, but much spoiled by the continued rain and want of sun. Pears on the walls are good, Jargonelles, Clapp's Favourite, Eyewood, Glou Morçeau, and Bergamot Esperen especially. Peaches and Nectarines fall off the trees from want of sun. Amsden's June Peach (usually good here) is ripe, but flavourless. Apples much below the average; Plums below the average; early Potatoes diseased; the later sorts have escaped as yet.

Flower garden.—Excepting Calceolarias all bedding stuff has felt the cold nights. July 13th, our minimum was 36°, the 11th, 37°. Herbaceous plants are good this year. The more showy now are the Aconitums, Veronicas, Campanulas, Centaurea macrocephala, and varieties of Sunflower. Among annuals, Scabious, Lupins, Gaillardias, and Godetias have proved best.—H. HUNTLEY, *The Gardens, Powis Castle, Welshpool.*

NOTTINGHAMSHIRE.

THE following is a summary of meteorological observations in these gardens for June and July, 1888:—June—Mean temperature of month, 55·0°; maximum on the 26th, 80·3°; minimum on the 18th, 36·7°. Maximum in the sun on the 26th, 136·9°; minimum on the grass on the 1st, 31·0°. Mean temperature of the air at 9 A.M., 55·6°. Mean temperature of soil 1 foot deep, 55·0°. The thermometer fell below 32° on two nights. Total duration of sunshine in month, 116 hours, or 22 per cent. of possible duration. We had six sunless days. Total rainfall, 1·32 inch. Rain fell on seventeen days. Average velocity of wind, 9·1 miles per hours; velocity did not exceed 400 miles on any day, and fell short of 100 miles on one day. Approximate averages for June:—Mean temperature, 57·1°. Rainfall, 2·26 inches. Sunshine, 162 hours. A very dull month with frequent slight showers, but small total fall; very low day temperature, but not cold nights, a large proportion of N and N.E. wind; closely resembles June, 1886. Vegetation very late: The first June for twenty years we have not gathered ripe Strawberries.

July.—Mean temperature of month, 56·3°. Maximum on the 19th, 72·7°; minimum on the 11th, 39·6°. Maximum in sun on the 19th, 140·3°; minimum on the grass on the 1st, 31·3°. Mean temperature of the air at 9 A.M., 57°. Mean temperature of the soil 1 foot deep, 57·1°. The temperature fell below 32° one night on the grass. Total duration of sunshine in month, 88 hours, or 18 per cent. of possible duration; we had nine sunless days. Total rainfall in month, 4·96 inches; rain fell on twenty-one days. Average velocity of wind, 8·7 miles per hour; velocity exceeded 400 miles on three days, and fell short of 100 miles on five days. Approximate averages for July.—Mean temperature, 61·2°. Rainfall, 2·36 inches. Sunshine (seven years) 172 hours. The coldest and dullest July since observations were commenced here, and the wettest except 1880. The days were especially cold, the mean maximum being 13° lower than last year. The heavy total rainfall was due to a number of moderate falls, and not to any especially heavy ones.—JOSEPH MALLENDER, *Hodsock Priory Gardens, Worksop.*

NORTHAMPTONSHIRE.

THE weather during June and July has been very unseasonable, the temperature generally exceedingly low, the maximum only on two occasions in June reaching 80°, while on six days it did not reach 60°, and twice only 56°. The minimum fell below 50° on twenty-three nights, and on five nights below 40°. Our lowest readings were 31° on the 18th, and 34° on the 14th, the radiation minimum falling to 27° on the 18th. We had rain on thirteen days, the total fall for the month being 1·66 inch. July was much worse than the preceding month, the maximum temperature being equally low, only on one day reaching 76°, and on twenty days it did not reach 70°, and on two days only 55°, the minimum falling below 40° on two nights, the radiation minimum falling as low as 29° on the 1st of the month, and at 9 A.M. on the 11th the temperature was 45°. Rain has fallen on twenty-seven days during the month. The greatest fall in one day was 0·70 inch, and the total for the month 5·95 inches.

The garden crops have suffered through the wet and want of sun. Strawberries, which have been a poor crop except James Veitch, decayed

before getting ripe; the variety named has been exceedingly fine. Cherries have cracked a great deal, but have been a fair crop. Apricots have not made any progress, and are under the average, but all small bush fruits have been plentiful and good. Apples are a fair average crop, and promise to be good. Pears are also fairly good. Peas have grown quite out of character; 3 feet varieties are 6 feet and upwards, but failing to fill their pods. Onions have suffered a great deal with mildew, and early Carrots are much cracked. Potatoes are getting badly diseased, but turn out enormous crops.

Our herbaceous borders have been fairly good, although a great many plants have been much affected by the bad weather. The following are a few which have withstood it best—Chrysanthemums segetum and maximum, Doronicum hybridum, Campanulas braeteata alba, macrantha, persicifolia, and var. alba. Astrantia maxima and major have been very fine. Phloxes have also been wonderfully good, Lady L. Napier, a fine white, has been grand; Delphiniums have done well, Madame Rachalet and nobilissimum especially; Erigeron glabellus var. mollis, Lychnis diurna and dioica fl.-pl., Trillium grandiflorum and sessile, Trollius americanus and giganteus, Dianthus caryophyllus var. and Atkinsi, a deep crimson variety, very fine, but rare; Pyrethrums, double and single var.; Œnothera Youngi has been grand, Irises have been splendid, Eremurus himalaicus and robustus have had fine spikes, and Dictamnus caucasicus giganteus has been magnificent. In the alpine garden Onosma taurica has done well, and Phyteuma comosum planted in sandstone has been very fine, Saponaria ocymoides Engadine, fine dark var., Gentians, Phloxes, Ramondia pyrenaica, and var. alba have all been fine. Of bedding plants we have but very few, tuberous Begonias having been much the best.—G. GOLDSMITH, *Floore Gardens, Weedon.*

SURREY.

THE weather in this district during June and July was almost unprecedented for heavy and continuous rains, a very low maximum temperature, and almost a total absence of sunshine. Our rainfall for June was 4·61 inches; on the 26th we had 1·69 inch. This is the greatest quantity in twenty-four hours registered here for the last ten years, and for July the total rainfall reached 5·06 inches.

During the first fortnight of June vegetation was much benefited by the rain, and things in general promised well. After that time the continued bad weather told most deplorably on the more delicate and tender crops. This was especially noticeable in the kitchen garden crops, such as Beet, Lettuce, Onions, Vegetable Marrows, Scarlet Runners, and the better sorts of Peas, the last failing to fill well, and having the appearance of autumn Peas. All the Brassica tribe have done well, Cabbage and Cauliflower being remarkably good, Carrots and Turnips fine. Perennial flowering plants, as a rule, suffered little in growth, but the continued wet was destructive to the flowers. The following have succeeded well here:—Achillea Ptarmica, Alstrœmeria aurea, Antirrhinum, Aquilegias, Campanulas, Canterbury Bells, Centaurea montana, Chelone barbata, Digitalis, Eryngium amethystinum, Gaillardia hybrida, Gypsophila paniculata, Helenium pumilum, Hemerocallis flava and disticha, Iberis sempervirens, Iris of sorts, Lathyrus latifolius and albus, Linum flavum, Œnothera biennis, Œ. Lamarckiana, Pansies, Papaver braeteatum and orientale, Pentstemons, Phlox, Potentilla, Pyrethrum hybridum, Rudbeckia Newmanni, Spiræa Aruncus, S. palmata, Sweet William, tree and herbaceous Pæonies. Annuals suffered more severely. These proved satisfactory:—Cacalia coccinea, Candytuft, Chrysanthemum coronarium sulphureum, C. Burridgeanum, C. Dunnetti, Collinsia bicolor, Godetias, Lupins, Phlox Drummondi, Poppies, and Senecio elegans.

Bedding plants, with the exception of the more robust growing Pelargoniums, were at a complete standstill, and looked quite autumnal. Carpet bedding failed to fill up, and from want of colour looked anything but what it ought, and succulent plants suffered much from wet and damp. The following Pelargoniums were the best here:—Flower of Spring, Marshal McMahon, Rev. J. Fenn, Star of Fire, John Gibbons, Rev. F. Atkinson, and Mrs. Turner.—J. RIDOUT, *The Gardens, Woodhatch Lodge, Reigate.*

WARWICKSHIRE.

OWING to our light, dry, sandy soil the crops have not suffered so much as in many other districts from the cold, dull, wet June and July we have just passed through. Of the sixty-one days rain fell more or less on thirty-four; on five days only had we any sunshine worth mentioning; the others were either cold and dull, or cloudy, with blinks of sunshine. The wind for the greater part of that time kept north, north-east, or north-west. Two or three nights about the middle of each month were exceptionally cold for the season, our coldest being on the mornings of the 14th June and 13th July, when we registered 37° and 35° respectively. The greatest heat we registered was on the 26th June and 19th July, when we had 88° and 82° respectively.

Kitchen garden crops look well, only Potatoes and Peas are much overgrown; disease is showing amongst the former, and the latter are affected by mildew to a slight extent.

In the flower garden there has not been much growth, and little or no flowers on the great majority of bedding plants. Harrison's Musk has done well, and some Tuberous Begonias we have been trying have never been without a few flowers. Such annuals as Stocks, Asters, Sweet Peas, Mignonette, and Lobelias have continued growing and blooming freely. Roses have not turned out so fine as they promised in May, the best buds damping off, but the season has been so much longer for cutting purposes that we have not much room for complaint. —A. CHRISTIE, *Warwick Castle Gardens.*

Notes & Gleanings

EVENTS OF THE WEEK.—On Tuesday and Wednesday next, September 4th and 5th, the Warwickshire Horticultural Show in connection with the County Agricultural Show will be held at Rugby. The two following days—*i.e.*, September 5th and 6th, are devoted to the Bath Autumn Show, which being held at the time of the visit of the British Association will be made unusually attractive, substantial prizes being offered for plants and fruit. At Edinburgh the Royal Caledonian Society's Autumn Exhibition will be held on the same dates. The following Friday and Saturday, September 7th and 8th, will be busy days at the Crystal Palace, Sydenham, the Fruit and National Dahlia Shows with a conference of fruit growers being in the programme.

—— THE WEATHER.—After a period of fine weather a most disastrous storm occurred on Tuesday last. Heavy rain accompanied by a gale of wind caused considerable devastation in many districts, a culmination of evils. Fruit trees have suffered greatly, farm crops also being much damaged.

—— KETTON GEM MELON.—In answer to Mr. Bardney, page 170, Mr. W. H. Divers writes—"This variety shows fruit on every lateral, and is a very free cropper. As far as I am able to judge at present the fruit shown at Liverpool was rather above the average size. Three other fruits were grown on the same plant which were not quite so large. As regards habit and constitution we find it very satisfactory."

—— THE KENTISH POTATO CROP.—Reports from East Kent state that the Potato crop is damaged by blight, and will be as much as 50 per cent. below the average in yield in some places. A tract of 1000 acres of Potatoes in Mid-Kent, which was under water some time, has been sold at the low price of £7 an acre.

—— FRUIT CONFERENCE AT ST. ALBANS.—A Conference on fruit suitable for market purposes will be held in the Corn Exchange, St. Albans, on September the 4th, at 7.30 P.M. The chair will be taken by H. P. Smith, Esq., J.P., ex-Mayor. Papers will be read by Messrs. S. Morgan, J. T. Wright, S. Haliday, J. Cheal, and W. F. Emptage.

—— EARLY PURITAN POTATO.—Mr. D. Percival, gardener, The Poplars, Wellingborough, writes:—"In the spring I bought 1 lb. of this new variety, and on the 21st of August I dug and weighed them, when they yielded 110 lbs., many of them being perfect tubers. Some of the heaviest weighed 1½ lb. In my opinion this will be the Potato of the future, the tubers cooking well, and of good quality."

—— "AN OLD SUBSCRIBER" wishes to know if any readers can inform him what is the best method of PRESERVING MOUNTAIN ASH BERRIES for use as decoration at Christmas.

—— GARDENING APPOINTMENT.—Mr. David Jones desires to state that he has been appointed to the charge of Tilgate Gardens, Crawley, Mr. W. Jordan being now steward of the whole estate.

—— IN the report of the SUTTON SHOW last week, Mr. King was credited with having won the first prize for six exotic Ferns, an honour that was really accorded to Mr. Penfold.

—— A PERSHORE correspondent, "J. W.," asks if the comparative ABSENCE OF BUTTERFLIES AND WASPS this year has been noticed. He also remarks the trees in his district, as a rule, "have made very little midsummer shoots, although such a dropping time."

—— MESSRS. JAMES CARTER & CO. request the insertion of the following paragraph—"We are informed that the whole of the bulbs required by the First Commissioner of Works, and also the Metropolitan Board of Works, for planting in the royal parks, are being supplied by Messrs. James Carter & Co., the Queen's seedsmen."

—— "F. G." writes—"Your correspondent 'Merton' mentions in his 'Notes at Kew' the merits of OLEARIA HAASTI as a shrub. It may be interesting to your readers to know that a specimen supplied by Messrs. Veitch of Exeter was planted in this churchyard in October, 1881. It is exposed to the full force of the westerly winds, and has thrived

where other so-called hardy shrubs have died. It blossoms profusely every year, and needs no protection here."

—— "B. C." sends the following two notes :—"At Holeyn Hall, the residence of Major Wood, where Mr. T. Irving is gardener, there is a PICEA NOBILIS 40 feet high, bearing about 200 cones ; some of the branches have sixty on each, the cones measuring 9 to 12 inches long, and the same in circumference."

—— "AT LAMBTON CASTLE GARDENS it may be interesting to note that Gros Maroc Grape on a Black Hamburgh stock has berries much more elongated and not so round as its usual character. In the same garden the fruit trees in pots bear remarkably well. Beurré Diel and Pitmaston Duchess Pears will weigh 28 to 30 ozs. each, and a fruit of the Apple D. T. Fish (Warner's King) measured 15 inches in circumference. Pine Apples are also noteworthy; suckers planted last March are throwing fine fruits, 4 to 5 lbs. each, and will be ripe in a month or so. Many of these are seedlings."

—— TRADE APPOINTMENT.—We are informed that Mr. William Napper, late of Osborne House, Alphington, has been appointed General Manager to Messrs. Jarman & Co., Chard, Somerset. Mr. Napper was connected with the Old Exeter Nursery for nearly twenty years, and in 1882 found at Newton Abbot the white Passion Flower, which has since become so well known.

—— AT a recent show in the Crystal Palace an interesting COLLECTION OF HOLLYHOCKS was shown by Mr. J. Blundell, Martell Road, West Dulwich, who has given much attention to these plants with good results. Forty-eight blooms were shown, comprising several promising seedlings, but of the named varieties being Venus, pure white ; Princess Beatrice, pale yellow ; and Princess of Wales, salmon. They were not large but full, even, and of good form.

—— A CORRESPONDENT states that the special feature of the DUBLIN ROYAL HORTICULTURAL SHOW were Dickson's, of Newtownards, new Roses. Her Excellency, the Lady Lieutenant, with the Dukes of Leinster, Abercorn, and a large suite, spent considerable time admiring them. They had the silver medal, and in another class first prize for forty-eight. Their show and fancy Dahlias, forty-eight, had a similar distinction. Grapes were splendidly shown, first prizes going to the Earls of Wicklow and Clancarty.

—— DURANTA PLUMIERI. — Captain N. W. Turner remarks, "Amongst berry-bearing shrubs for a conservatory this South American one well merits a place. Its long spikes of dark Heliotrope-coloured flowers being succeeded by strings of golden berries, the weight of which causes the branches to droop very gracefully ; and as I have known it in Florida to withstand severe frosts, there is little doubt but that being wintered in a very cool house would conduce to the finer display of bloom during the succeeding season."

—— A CHILDREN'S FLOWER SHOW was held last week in one of the most densely populated districts of Southwark. Early in the year 200 plants were given out to the children under suitable regulations, of Fuchsias, Musk, Pelargoniums, Tradescantias, and "Creeping Jenny," 117 of these being returned at the Show. Three prizes and some extras were offered in each of the five classes, and when distributing the prizes in the evening the Baroness Burdett Coutts gave an instructive little homily on flowers and flower culture, pointing out the educational value of such a competition.

—— "IN the Journal for August 2nd," writes "J. L. B.," "it is stated that Mr. Payne prevents MELONS CANKERING by planting deeply. I have never had any cankered stems since I adopted high planting. None of the stem between the soil and seed-leaf is covered with soil, either during potting or planting out. Each of eighteen Melon plants in 14-inch pots has given two crops of fruit, and as the plants required water two or three times a day it would have been difficult to keep the water off the stems. During the second crop all the water has been poured directly on to the stems to see what effect it would have but it has not made the least difference."

—— THE Paris correspondent of a daily paper remarks :—"M. Prilleux has just discovered an infallible REMEDY for the POTATO DISEASE. This is the receipe—Put 13 lbs. of sulphate of copper and the same quantity of chalk into 22 gallons of water and souse the plants with the mixture. An experiment made from the 5th to the 16th instant saved the diseased plants thus treated, while thirty-two per cent. of those which were left to themselves went to the wall ; but the disease must be taken in hand as soon as the first black spots have been perceived on the leaves. The remedy is simple enough, and so is the application, which has been favourably received by the Academy of Sciences."

—— MR. W. WAINWRIGHT, 1, Weast Lane, Eccles Old Road, near Manchester, sends the following WARNING TO GARDENERS :—"About five weeks ago a man called on me representing himself as a gardener out of employment who had just recently lost his wife. I gave him assistance (both food and money), and he called several times during one week. The last time (July 13th) he said that a leading gentleman who is well known in Manchester had obtained him a situation, and as he begged hard for more money I lent him £2. He promised to write, also to come and see me, which he failed to do, and from inquiries since made I find all that he said to be false, and that he has defrauded others besides myself. He has given the name of McBride."

—— LAST Saturday, at the usual weekly meeting of the members of the WAKEFIELD PAXTON SOCIETY, Mr. Rigg presided, and Mr. Arthur Goldthorp was in the vice-chair. There was an average attendance of the members. Mr. T. Gartery of Rotherham, who has previously given essays at the Wakefield Society, read an interesting and thoroughly practical paper on "Tomatoes," and some fine specimens were exhibited. Mr. Gartery treated his subject well, and gave much valuable information and many useful hints to his fellow professional gardeners, and also to amateurs. An interesting discussion followed the reading of the paper, during which reference was made to the growing popularity of the Tomato. A hearty vote of thanks was given to Mr. Gartery.

—— AS announced recently, a party of members of the NATIONAL CHRYSANTHEMUM SOCIETY and their friends visited Baron Schröder's gardens, The Dell, Egham, on Friday last, August 24th. About seventy-five assembled at Waterloo Station, and several others were met at Egham, making the total party over eighty. Several hours were profitably and agreeably spent in inspecting the valuable collection of plants, the fruit houses, and the admirably kept gardens under the guidance of the gardener, Mr. Ballantine, and his assistants. The party then adjourned to the "Angler's Rest Hotel" for tea-luncheon, and after a pleasant day's outing, marred only by one rather heavy shower in the evening, they left Egham Station for London at 8.30 P.M. The arrangements for the excursion were all made by Mr. W. Holmes, who proved a genial and considerate conductor.

—— THE usual fortnightly meeting of the WALKLEY (SHEFFIELD) AMATEUR FLORAL AND HORTICULTURAL SOCIETY was held on Friday evening last t the Society's rooms, the President (Mr. T. B. Hague) in the chair. A remarkably fine collection of Roses (cut blooms) was exhibited by Mr. Duncan Gilmour, jun., for which a unanimous vote of thanks was passed by the meeting. Excellent stands of cut Roses were also shown by the President and by Mr. J. Shipman. Plants, cut flowers, and vegetables were shown by Messrs. Ash, Jarvis (Secretary), Herringshaw, Cuckson, and others. An exhaustive and valuable paper was read by Mr. Jno. Haigh on "The Fertilisation of Flowers," which gave much satisfaction, and indueed a very interesting discussion. A vote of thanks to the essayist was moved by Mr. Shipman, seconded by Mr. Cuckson, supported by Messrs. W. K. Woodcock, and Councillor Outram, and carried with acclamation.

—— A CHINESE PAGODA IN FLOWERS.—Thousands of visitors have been to the Danvers Hospital grounds (at Boston) the past few weeks, and the horse-cars carry great loads daily, extra trips being run on visiting days—Mondays and Wednesdays. The main object held in view by the many strangers is to see the marvellous flower beds designed and arranged by the florist and gardener, Ettore Tassinari. The largest design is a Chinese Pagoda, 17 feet high, with a dome supported by six pillars, and archway beneath high enough to pass under without stooping. There are three fountains and thirty varieties of plants. The front of the base has a calendar of growing plants in portable boxes, and the back a shield, flags, and draperies. Florists from far and near have pronounced this design the best they ever saw. A solar clock or sundial attracts much attention, as it accurately tells the time of day by a shadow cast by a pole of growing plants placed at an angle of 47°, and pointing to the north star. The shadow falls on floral numerals in the rim of a horseshoe-shaped bed of plants.—(*American Paper.*)

—— A CORRESPONDENT writes as follows on THE ACME WEED KILLER which has been advertised :—"In April we gave several walks a good dressing of it, which in a few days after its application destroyed every vestige of vegetation, and no weeds have been seen since on that part of the garden. It leaves the walk clean, bright, and firm, and there is, in the end, a considerable saving of expense over hoeing and hand-weeding. For some previous years we have been in the habit of using No. 5 carbolic acid largely diluted with water, but prefer the Acme as being cheaper, and free of that objectionable smell which is left for several days after applying carbolic acid. When applying the preparation great care must be taken not to allow it to come in contact with Box or grass edging. I have, during hot dry weather, when the paths have been very hard and dry, applied a few cans of clear water a few hours prior to using. This softens the top, and the mixture readily soaks down to the roots of the weeds, destroying them, and giving us the greatest satisfaction."

—— A VEGETARIAN CONFERENCE. — The London Vegetarian Society invited last Monday to one of their "Fruit and Cake Conferences," the members of the London Press, and about forty-five accepted the invitation. After the repast, consisting of fruits of various sorts, salads, cold savouries, and various cereal foods and sweets, Mr. Alderman H. Phillips, of West Ham, presided at the Conference. In commencing his address, the Chairman expressed his deep regret at the absence of Mr. Hills, their President, which was a great loss for all present. After giving a few of the leading reasons for upholding the non-flesh diet, Mr. Phillips said vegetarianism did not mean eating vegetables any more than librarian meant eating libraries. Fruit and cereal foods were, he contended, the proper food for man, because Science classed us with the fruit-eating division of animals. Mr. James Burns, in an eloquent address, spoke of the pressure to which Pressmen were subject from a lengthened experience, and of his strong convictions of the immense advantage of a diet entirely free from all stimulants, solid or liquid. Mr. Manning, the Organising Secretary, closed the meeting by urging all to give a trial to a movement that made out so good a *prima facie* case for itself.

—— DR. HOSKINS, writing in the *American Garden* on AMERICAN PLUMS, says, "The European Plum, from which our cultivated varieties is derived, is said to have its origin from the uneatable Sloe. Now, the American wild Plum is by no means an uneatable fruit. Some of the wildlings are really good, and it is strange that so little has been done in the way of cultivation, crossing, and the growth of seedlings to improve the race. Interest in them is, however, increasing, and before long we shall be apt to see marked gains, such as have been made with our native Grapes. Mr. Munson of Denison, Tex., is much interested in this fruit, but I fear that the Cicasaw type will not prove so well adapted to northern culture as the two northern types—that of Canada and that of the West. These two are not alike, the western Plum being nearer the European in firmness of flesh and plumpness of seed. The Canada type has a large and very flat seed, and in most cases the flesh is soft and watery. But for preserves and jellies these wild Plums are on the whole superior to the foreign sorts, having a brisk flavour, approaching that of the Peach. They also have the merit of extreme hardiness, being rarely harmed by any amount of cold. The colour is in shades of yellow and red, and the size is sometimes quite large. Selections have been made of varieties with pretty firm flesh, and in other ways showing a tendency to vary in the direction of improvement. The worst fault about the western type is the tendency, like that in the Strawberry, to be defective in the staminate element, resulting in barrenness, unless care is taken to plant varieties with good stamens close by. There ought to be no difficulty in crossing the various types together, or with the European Plum, and when a decided break is made seedlings varying widely are pretty sure to appear, from which selections can be made in the directions desired for improvement. Many of these native Plums are able to resist the attack of the curculio and produce large crops of fruit, which is a great point in their favour."

A SAD CASE.

BY your very kind permission, I beg to ask the respectful attention of your numerous readers to the case of Joseph Richardson. About three years ago he was head gardener to J. S. Wheatley, Esq., Calverton Hall. Recovering from diphtheria, his left knee diseased, and having a wife and six children he and his family had to depend upon his small club pay and the aid of friends. At the General Hospital, Nottingham, it was found necessary to amputate the leg, but owing to the disease he was discharged as incurable. Through the kindness of other friends he was taken to the Llandudno Hospital, where his thigh was amputated. The poor man is now in great distress, and needs help. I fear he is in a consumption. Formerly he contributed certain articles to your valuable Journal, and may be known to some of your readers, who, I am sure, in human sympathy, will help this most deserving case.

Subscriptions on behalf of J. R. will be recived by—W. FIELD NEWMAN, *Endowed School, Calverton, Notts;* or by E. STEWARD, *Sec. Notts Horticultural Society, 2, Exchange Row, Nottingham.*

[The occasional short contributions of Mr. J. Richardson to this Journal a few years ago led us to regard him as an intelligent, educated, practical gardener, and we commend his case to the sympathy of our readers. Members of gardeners' associations might perhaps collect a few shillings at their meetings to assist a brother gardener in such dire distress; and small collections may possibly be made in some private gardens.]

ROYAL HORTICULTURAL SOCIETY.

AUGUST 28TH.

THE greater portion of the usual available space in the Drill Hall, James Street, Westminster, was occupied with exhibits on Tuesday last, Gladioli from Langport, hardy flowers from Tottenham, Dahlias from Crawley, and Orchids with other choice plants from Upper Holloway constituting the chief attractions. The weather was, however, most unfavourable and the attendance of visitors small.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. J. Lee, R. D. Blackmore, T. J. Saltmarsh, G. W. Cummins, J. Burnett, W. Marshall, and Peter Barr.

Mr. W. Roupell, Roupell Park, was awarded a cultural commendation for the Strawberry and several Frontignan varieties of Grapes, also clean bunches of Duke of Buccleuch, with fine berries. Mr. Owen Thomas, Chatsworth Gardens, sent small bunches of a seedling black Grape with small globular berries. It was considered to be like Early Ascot in appearance, the flavour was sweet, but devoid of special character, and the skin was thick. It is said to be earlier than Black Hamburgh. Mr. Whillans, Blenheim Gardens, Woodstock, exhibited a neat well netted Melon, which was not ripe, and an opinion was deferred to the next meeting. Several other Melons were also shown; one from Mr. Boston was decayed, and another, named Standard, from Messrs. Veitch & Sons, Chelsea, was not in its best condition. A vote of thanks was accorded to the last named firm for a collection of fruits, including very large handsome fruits of Sea Eagle Peaches, Plums, Apples, Pears, Morello Cherries, and Quatre Saisons Strawberries.

FLORAL COMMITTEE.—Present: The Rev. W. Wilks in the chair, and Messrs. Shirley Hibberd, H. Herbst, J. Fraser, J. Walker, W. Holmes, W. Goldring, R. Dean, B. Wynne, H. Ballantine, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, and Dr. M. T. Masters.

A silver-gilt Banksian medal was awarded to Mr. B. S. Williams, Upper Holloway, for a handsome and valuable group of flowering and fine-foliage stove and greenhouse plants. Conspicuous amongst the Orchids were some beautiful examples of Cypripediums, such as C. Ashburtoniæ and its two varieties expansum and superbum, C. Dayanum, the new C. Sanderianum, C. superbiens, C. œnanthum, and a grand form of the richly coloured C. œnanthum superbum, also the most valuable C. tessellatum porphyreum with three flowers on one spike. Lælia Perrini, Cattleya gigas, C. Dowiana, Dendrobium Goldei and D. formosum were all represented by well grown specimens, such as visitors to Upper Holloway are accustomed to seeing. The autumn-flowering Amaryllis Mrs. W. Lee, one of the reticulata hybrids, was noteworthy, also the rosy crimson Anthurium leodinense, with finely formed broad spathes; Griffinia Blumenavia, a graceful stove bulbous plant bearing blue and white flowers, and Adiantum colpodes roseum, having the young fronds of a bright rosy colour. Collections of Droseras and Dionæas and of Sarracenias completed the group. The Sarracenias were excellently represented by small but characteristic and well coloured plants, the varieties shown being Williamsi, hybrida, Wilsoni, illustrata, very distinct, green and red; Tolliana, Chelsoni, variolaris; and Mitchelliana, deep red.

Messrs. Kelway & Son, Langport, had a brilliant group of Delphiniums, Gaillardias, and Gladioli, the latter numbering some hundreds of handsome massive spikes that seemed to have been unaffected by the weather. Several certificates were awarded, and a silver Banksian medal were adjudged for the whole group. Messrs. H. Cannell & Sons, Swanley, sent a collection of double and single Begonias, mostly the former, described as having been raised from seed sown February 11th, 1888 (bronze medal). Certificates were awarded for several varieties which are described below. Messrs. Cheal & Son, Crawley, exhibited a group of Cactus, Pompon, and single Dahlias, comprising some excellent varieties and many novelties, the best being selected for certificates (bronze medal). Mr. T. S. Ware, Tottenham, as usual had a varied and beautiful group of hardy flowers, including single and Pompon Dahlias, Lilies, Gladioli, Iceland Poppies, &c. (bronze medal). Mr. F. T. Smith, West Dulwich, showed a collection of Hollyhocks and Phloxes. Mr. R. Dean, Ealing, had some large trusses of Phloxes. Messrs. Munro and Ferguson, Edinburgh, sent a double white Matricaria inodora named Snowflake. Messrs. R. Veitch & Son, Exeter, showed a pale yellow Sunflower named Primrose Dame, and Messrs. Walsham & Son, Scarborough, sent flowers of Carnation Juliet, a peculiar pale buff tint.

Mr. W. Roupell exhibited a fine plant of Funkia grandiflora with eight spikes of long white flowers and bright green narrow leaves, which contrasted well with plants of the brilliant Lobelia splendens. A. Le Doux, Esq., Langdon House, East Moulsey (gardener, Mr. W. Rhynes), showed a variety of Cattleya Loddigesi, the sepals and petals soft mauve, the lip pale yellow; the plant had two spikes of four flowers each. Mr. J. T. West, gardener to W. Keith, Esq., Brentwood, showed some seedling Dahlias. Mr. Smee sent a plant of Lycaste tetragona, having brownish sepals and petals and purple lip. A vote of thanks was accorded to Messrs. Veitch & Sons, Chelsea, for grand blooms of the orange and lemon coloured African Marigold with Veitch's striped French Marigolds. From the Royal Horticultural Society's Gardens, Chiswick, came a large collection of Stocks and Asters with two fine spikes of Hedychium Gardnerianum.

PLANTS CERTIFICATED.

Adiantum versaillense (B. S. Williams).—A variety of the Luddemannianum type, dwarf and compact, the fronds much bunched at the apex, the pinnules clustered and bright green.

Odontoglossum Karwinski (Mr. Robbins, gardener to W. Vanner, Esq., Camden Wood, Chislehurst).—A strong growing Orchid, with a panicle nearly 4 feet long, the sepals and petals barred with brown, the lip deep purple, fading to nearly white at the margin.

Disa lacera (A. H. Smee, Esq.).—One of the "Blue Disas," with a tall slender scape bearing five small flowers, three expanded, the upper sepal hooded, and with the two lower bluish purple. The lip is purple and fringed. It was awarded a botanical certificate.

Delphinium Horus (Kelway & Sons).—A bold handsome variety, flowers large, deep blue with a white centre.

Canna Capriciense (Cannell & Sons).—A showy variety, the flowers large orange scarlet edged with yellow.

Canna Francisque Morel (H. Cannell & Sons, and T. S. Ware).—Flowers large, with broad segments, deep crimson.

Canna Madame Just (Cannell & Sons).—Bright orange red, very handsome and distinct colour.

Canna Amiral Courbet (H. Cannell & Sons).—Very fine, yellow, spotted red; one of the most handsome.

Begonia The Lady (H. Cannell & Sons).—A single tuberous variety, the flowers of good shape, the petals broad and rounded, pure white.

Begonia Mrs. Lascelles (H. Cannell & Sons).—A double tuberous variety, with exceedingly large flowers, nearly 5 inches in diameter, the petals broad, bright clear rose, white centre.

Begonia Mrs. Lynch (H. Cannell & Sons).—A double tuberous Begonia, the flowers of good form, pale soft pink, the margins neatly undulated.

New Gladioli (Kelway).—*Bullion*, buff yellow, with a few crimson streaks, distinct; *Mago*, rich crimson, white centre, large flowers and spike; *Nicon*, soft blush and buff, and a few rosy streaks, flowers well formed; *Magus*, delicate blush, nearly white, streaked with purple in the centre, very handsome; *Cebes*, crimson purple, fine flower and spike.

Gaillardia splendidissima plenissima (Kelway & Son).—Very full, double, with numerous small florets, gold and red.

Dahlia Beauty of Brentwood (Mr. West, gardener to W. Keith, Esq., Brentwood).—This was described as a seedling from Juarezi, with larger footstalks, free and of fine habit. The colour is a bright purplish crimson, rich and distinct.

Trichocentrum Ella (G. T. White).—A botanical certificate was awarded for this Orchid, the flowers of which are like those of a small Odontoglossum, white with purple spots, lip yellowish with small crimson dots.

Dahlia Duchess of Albany (J. Cheal & Sons).—An exceptionally distinct single variety of quite novel colours, soft mauve edged with pale buff brown, the florets broad.

Dahlia Victoria (J. Cheal & Sons).—Single; the florets neat and spreading; white edged with dark scarlet.

Campanula isophylla alba (T. S. Ware).—This differs only from the ordinary type in the flowers being pure white; it is free and graceful in habit.

At a general meeting held in the afternoon, Rev. W. Wilks, Hon. Sec., in the chair, the following candidates were duly elected Fellows—viz., Miss Browning Hall, Thomas Butcher, S. C. Clay, Edward Cumberlege, H. M. Cumberlege, James H. Forwalk, C. A. Harris, C. B. Saunders, A. W. Tait, H. A. Thompson, Theodore Waterhouse, John Watkins, A. L. Wigan, and Mrs. Spencer; and R. B. Gall as Associate.

CALENDULA PLUVIALIS.

Though well entitled to rank amongst old-fashioned plants, this useful hardy annual is by no means a familiar occupant of modern gardens. Under the name given above it was cultivated by Philip Miller in 1726, and it seems to have been included in the Kew collection since the time Aiton's "Hortus Kewensis" appeared—namely, in 1789. In that garden a portion of one of the Compositæ beds is still annually devoted to it, and from the specimen there grown our sketch (fig. 22) has been prepared. The flower heads are about the size of the common Marigold, the upper surface of the ray florets pure white, the leaves purplish, they are freely produced; the plant is of moderate height, the leaves narrow and slightly serrated. It was long ago noticed that the flower heads "open when the sun shines, closing every evening, and remaining closed in dull weather." It has also been discovered that "when the flower decays it hangs down during the growth of the seeds but when they are fully ripe the peduncle is raised again, so that the heads stand upright."

Easily raised from seed and growing readily in almost any soil that is not too heavy it is well worth a place in any garden. It is a native of



Fig. 22.—CALENDULA PLUVIALIS.

the Cape of Good Hope, and is sometimes seen under the generic name Dimorphotheca.

HORTICULTURAL SHOWS.

SHANKLIN, ISLE OF WIGHT.—August 15th.

The eleventh annual Exhibition of the above Society was held in the very beautiful grounds of "Rylstone," by kind permission of Mons. and Madame Spartali. The weather was most unfavourable, rain pouring in torrents at intervals all the morning. The Exhibition was kept open another day to give the many visitors in town another opportunity of visiting the Show. Three large marquees were provided for the various exhibits, the plant and vegetable classes being well filled, but there was a great falling off this year in the fruit classes. The chief exhibitors in the plant classes were Mr. G. Wilkins, gardener to S. W. Ridley, Esq., St. Helens, who showed amongst others a fine specimen of Asparagus plumosus nanus and Cissus discolor. Mr. Stickland, gardener to Mons. Spartali, had some splendid Cockscombs, dwarf and good, also good Zonal Pelargoniums and Tuberous Begonias, stove and greenhouse Ferns, &c. Mr. G. Dale, gardener to W. Gibbs, Esq., was first with fine foliage plants, and Mr. Geddes, gardener to G. F. Coster, Esq., took many prizes in the plant classes.

Mr. J. Banting, florist, took highest honours for a bouquet and

buttonholes, and second for ladies' sprays, and also showed a splendid cross of Eucharis and other choice flowers not for competition, all characterised by tasteful and elegant arragement. Cut blooms of Zonal Pelargoniums, Asters, Marigolds, Zinnias, Cactus and Pompon Dahlias, Phloxes, and Gladioli were all well represented in their several classes, and formed an attractive feature. With one or two exceptions the fruit was only moderate, the season being all against the ripening. On the other hand the vegetables were extraordinarily good, and brought out strong competition in the professional, amateur, and cottagers' classes. The leading variety of kidney Potatoes were Pigaut's Improved, exhibited by Mr. Pionchon. International Kidney, Edgecote Purple, and Snowdrop were also well represented. In the rounds Schoolmaster was largely shown, and a good dish of Sutton's Seedling was very attractive.

It is to be hoped that the exertions of Mr. W. Gibbs, the President, the Hon. Sec., Mr. J. Silsbury, and the members of the Committee will be rewarded with extra support to enable them to show a clear balance-sheet.—C. O.

TROWBRIDGE—August 22nd.

There are few older Societies than this, and if the annual Exhibition is not very high class throughout, there is always much that is attractive and worthy of notice. Nothing in the shape of an innovation is ever attempted, the prize schedule year after year being only slightly varied. In spite of this and the moderate prizes offered for plants especially, quite a large show is brought together, while visitors from many miles around flock in great numbers to Trowbridge for the day. It is one the principal events of the year in the district, and with ordinarily fair weather success is never doubted. Mr. James Huntley has long and ably filled the post of Honorary Secretary, and a large Committee assist him to the best of their ability.

Fuchsias are always very fine at these Shows, and on this occasion they were quite as numerous and good as usual. With six specimens Mr. Tucker, gardener to Major W. P. Clark, Trowbridge, was well first, having grand pyramids not less than 8 feet high, most of the varieties being Lye's Seedling. Mr. H. Pocock, gardener to J. P. Haden, Esq., Trowbridge, was a good second. Mr. J. Matthews, gardener to W. R. Brown, Esq., Trowbridge, was first for four specimens, these being wonderfully fine and well flowered, the second prize in this instance going to Mr. Tucker. The best nine stove and greenhouse flowering plants were staged by Mr. Tucker, who had well flowered medium-sized specimens of popular kinds, Mr. J. Matthews being a good second. Mr. Pocock was first for six plants, and Mr. Tucker second ; and for three specimens Mr. J. Matthews was well first, the second prize going to Mr. J. Currey, gardener to Colonel Pepper, Salisbury. The last named was the most successful with fine-foliage plants, Mr. W. C. Drummond, Bath, taking the second prizes. The best Heaths were shown by Mr. J. F. Mould, Pewsey, the second prize going to Mr. J. Matthews. Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, was the only exhibitor of Orchids, and was rightly awarded the first prize. Grand Ferns were staged, the competition as usual being keen. Mr. Tucker was awarded the first prize, his Adiantums and Gymnogrammas being especially noteworthy. Equal seconds were given to Mr. J. Coke, gardener to A. P. Stancombe, Esq., Trowbridge, and Mr. H. Pocock, both having several well grown plants in their respective groups. Mr. Matthews had the best Coleuses and Caladiums, Mr. Tucker the best Achimenes and Pelargoniums ; Mr. C. Richmond, gardener to G. L. Palmer, Esq., Trowbridge, the best double and single Tuberous Begonias and Gloxinias ; and the Rev. C. C. Layard, Bath, the best Cockscombs, Petunias, and Verbenas, the competition being close and good in nearly every instance.

Cut flowers, including Roses, Dahlias, Asters, and Carnations, are always extensively and well shown at Trowbridge. In the amateurs' classes for the former, Mr. Campbell, gardener to S. P. Budd, Esq., Bath, was the most successful competitor, and in the open classes he was also first for twenty-four single blooms. Mr. J. Mattock, Oxford, took the lead with twelve triplets, Messrs. Keynes, Williams & Co., Salisbury, being a close second. The latter firm were also second for twenty-four singles, and they were the most successful in several classes for Dahlias. Mr. G. Humphries, Chippenham, also staged several excellent stands of Dahlias, and was awarded the second prizes. The most successful in the various classes for Asters were Messrs. G. Cooling & Son, Bath ; G. S. Walters, Calne ; G. Garraway, Bath ; and W. Jones, Bath. Messrs. G. & F. Hooper, Bath, had the best Carnations and Pansies, and with Gladioli Miss C. Walters, Calne, and Mr. G. S. Walters were the prize-winners. Several classes were provided for vases or epergnes of flowers, as well as hand bouquets and wreaths, and in all of them the competition was very keen. Some of the most successful were Messrs. M. Hookings, Clifton ; T. Meakins, C. Winstone, Clifton ; E. T. Hill and Miss L. Durbin, Bath.

Fruit and vegetables were plentiful and of good average quality. The best collection of ten dishes of the former was staged by Mr. A. Miller, gardener to W. H. Long, Esq., Rood Ashton, who had a creditable display. With six dishes, Mr. W. Iggulden, gardener to the Earl of Cork, Frome, was first, and Mr. G. Pymm second, both having good collections. Mr. Miller had the best Pine Apple, though the Judges awarded an equal first to Mr. M. Hookings for a small Smooth Cayenne which happened to be the ripest. Several classes were provided for Grapes, all of which were well filled. The best black Grapes, excluding Muscats, were staged by Mr. J. Gibson, gardener to Earl Cowley, Chippenham, who had very good well-finished bunches of Black Hamburgh. Mr. A. Miller was second for the same variety, and Mr. Iggulden had a third for well finished Gros Maroc. In a corresponding class for white Grapes Mr. Iggulden was first with well ripened Buckland Sweetwater, and Mr. J. Attwell, gardener to T. B. Brain, Esq., second. Mr. Iggulden was also first for Muscat of Alexandria, the second prize going to W. Shelton, gardener to W. R. Wait, Esq., Bristol. Mr. J. Gibson staged very good Madresfield Court in the class for black Muscats, and was first, Mr. Attwell being second with the same variety. There were fairly good Melons, the best green-fleshed variety, unnamed, being staged by Mr. W. Atkins, gardener to J. H. Foley, Esq., Limpley, Stoke ; the Rev. C. C. Layard was second. In the class for a scarlet-flesh variety Mr. Iggulden was first with a heavy and excellent fruit of Blenheim Orange, Mr. M. Hookings being second. Messrs. J. Bishop, W. Iggulden, C. J. Jones, A. Miller, W. Atkins, W. Evry, and E. J. Greenland were the most successful in various classes for Peaches, Nectarines, Apricots, and other fruits, the competition being fairly good throughout. Mr. G. Garraway was the most successful with vegetables, Mr. A. Miller also having a capital collection. Mr. W. Strugnell, gardener to A. R. Baily, Esq., Frome, was first for a dish of Tomatoes, staging good fruit of Mikado, the second prize going to Mr. J. Gibson. The list of other prominent prizewinners included Messrs. F. Stokes, E. G. Lush, A. Gibson, R. O. Hale, J. Hudd, W. Bristol, and N. Elkins.

SHREWSBURY.

The annual Exhibition of the Shropshire Horticultural Society, better known as the "Shrewsbury Show," was held in the Quarry Grounds of that town on August 22nd and 23rd. The success of this Society has become familiar to horticulturists, and great as that has been in former years that of this year has far surpassed all previous records. The entries numbered 2800, being 360 more than in 1887. It will be admitted this is a great stride, but other important features have kept pace with it ; and the gate money, to which all show officials look with interest, came up to unprecedented figures. On the first day of the Show the attendance is largely composed of subscribers, and the gate money on that day is not regarded as decisive, although some societies would consider it important, as in 1887 £130 17s. 8d. was taken, whilst on the first day of this year it amounted to £247 1s. 3d. ; but it is the second day which extends the coffers, and the figures are almost startling. They are as follows :—1887, £1142 17s. 6d.; 1888, £1307 4s. 6d. ! And to this must be added some hundreds of pounds for tickets sold previous to the Show, which brings the gate money of this year close upon £2000. This, as may be understood, is not accomplished without a prodigious amount of hard work ; but it is admirably executed, and the energy and courtesy of Messrs. Adnitt and Naunton, the indefatigable Hon. Secs., as well as that of the Committee generally, increase with the development of the Show. The arrangements were excellent, and every detail was carried out without a hitch. Results speak so loudly in this case that it is almost superfluous for us to offer the officials our hearty congratulations, but they merit every word that can be said in their favour. The town and district have derived many benefits from the surplus funds of the Society, and generosity is still part of their programme. We were by no means inclined to find fault with the amount of money given in prizes. It is handsome, but additions to some of the existing prizes and a few more classes would not be harmful, but it is only right that they should extend with the development of the Show. Indeed, under such a flourishing Society everything ought to be included and liberally provided for that is in any way connected with the advancement of horticulture.

Plants.—A huge tent contained the leading classes. The prizes of £25, £20, and £15 brought some magnificent specimens. Mr. Cypher of Cheltenham was awarded first prize for the strongest twenty we have yet seen him stage at this Show. Evidently opposition was anticipated, and good as the second plants from Mr. Roberts, gardener to A. Nicholson, Esq., Leek, were, there was a difference. Mr. Cypher's were in superb foliage and flower, and comprised Latania borbonica, Keatia Fosteriana, K. australis, Cycas revoluta, C. circinalis, Cordyline indivisa, Dasylirion acrotrichum, Croton Queen Victoria, C. Neumanni, Erica Marnockiana, E. Thompsoni, E. Irbyana, E ampullacea Barnesi, Allamanda Hendersoni, A. nobilis, Ixora Pilgrimi, I. Regina, Phœnocoma prolifera Barnesi, and Statice profusa. The best from Mr. Roberts were Croton Queen Victoria, C. majesticus, C. angustifolius, Erica Irbyana, Dipladenia amabilis, Ixora coccinea, and Latania borbonica. Mr. Finch, Oswestry, was third, his best being Erica Lindleyana, Croton Morti, and Dipladenia amabilis. In the class for nine stove and greenhouse plants Messrs. Pritchard & Sons, nurserymen, Shrewsbury, were a good first with fine grown specimens of Eriea ampullacea Williamsi, Gleichenia dichotoma, Clerodendron Thompsonianum, Allamanda Hendersoni, Croton Queen Victoria, Davallia Mooreana, Lapageria alba, and Latania borboniea. Mr. Farrant, gardener to Mrs. Juson, Shrewsbury, was second and third. Mr. Farrant was also first for six stove and greenhouse plants, confined to gardens in Salop and Montgomery, but there was nothing remarkable in this class. Ferns followed, and Mr. Roberts gained the first place with good specimens of Todea superba, Davallia Mooreana, Aspidium concinnum, Microlepia hirta cristata, Adiantum concinnum, Cyathea dealbata, and Hymenophyllum demissum. Mr. Lambert, gardener to Col. Wingfield, Onslow, Shrewsbury, was a close second. In the gardeners' class for the same number Mr. Juson was first ; Mr. Milner, gardener to the Rev. J. D. Corbet, Sundorne Castle, Shrewsbury, second ; and Mr. Lambert third. The class for six plants in flower, Orchids excluded, was well filled, Mr. Cypher being first with Ixora Fraseri, Allamanda nobilis, Statice profusa, Eriea Marnockiana, E. ferruginea major, and E. æmula. Mr. Roberts and Mr. Finch second and third.

Palms were very effective, Mr. Roberts, Mr. Cypher, and Messrs. Pritchard & Sons winning the prizes with fine plants, amongst which Latania borbonica, Kentia Fosteriana, K. Belmorcana, Thrinax elegans, T. argentea, and Seaforthia elegans were conspicuous. Dracænas were well shown by Mr. Lambert and Mr. Milner. The first prize Caladiums from Messrs. Pritchard were especially good, larger and better coloured than the second one from Mr. Farrant. Coleus were not particularly good, Mr. J. Barker, Shrewsbury, showing the best; but Fuchsias were attractive, the finest coming from Messrs. Pritchard. Begonias from Mr. J. Owen, The Cedars, and General Jenkins, Cruckton, were well grown, and the double and Zonal Pelargoniums were extremely showy. The groups arranged for effect in a space of 100 square feet commanded much attention, as they always do when well arranged, but only two were entered, both from Messrs. Pritchard & Sons. The first prize was withheld, the second and third being awarded. Both groups were tastefully arranged, and merited the higher awards. Withholding prizes is a discouraging practice. The class for twelve plants for table decoration was a very interesting one, Mr. Lambert being first and second with fresh little Palms, Crotons, and Dracænas, &c.; and Mr. Dick, Thames Ditton, third.

Plants from amateurs were arranged down the middle of the fruit tent, and although lacking the dimensions of many of the specimens shown in the first one, some fine and well-grown plants were to be found there. For six stove and greenhouse plants, Mr. Burr, Oaklands, Shrewsbury, came first with Bougainvillea glabra, Allamanda Hendersoni, Lapageria rosea, Statice profusa, Stephanotis floribunda, and an Ixora, all well bloomed. Mr. Barker had the best Ferns and Coleus; Mrs. Wace, College Hill, the best Fuchsias; and Mr. H. Owen the best Pelargoniums. Achimenes were small, and Gloxinias past their best. Petunias were extra good, Miss Edith Brooks, Council House, winning first prize with four grand doubles. Some of the amateur collections reduced their chances of winning through having one or more very poor plants amongst the good ones, but the display regarded collectively was exceedingly effective.

Cut Flowers.—Some of these bore traces of being unmercifully treated by the weather, but others had been more fortunate, and all classes contained some good blooms. Messrs. Perkins & Sons, Coventry, were first for twenty-four cut Roses. These were large and bright, a few of the very best being Alfred Colomb, La France, Eclair, Maréchal Niel, Madame Victor Verdier, Le Havre, Horace Vernet, E. Y. Teas, and Louis Van Houtte. Mr. Murrell, nurseryman, Shrewsbury, was a close and good second, Her Majesty, A. K. Williams, Marie Van Houtte, and Marie Baumann being the leading varieties. The amateur Rose classes were well filled, and close to these the Dahlias were staged in great numbers. In the class for thirty-six varieties Messrs. Heath & Son, Cheltenham, were first with splendid blooms. Conspicuous amongst these were Mrs. Gladstone, Joseph Service, Joseph Green, Mrs. W. Slack, John Henshaw, Jas. Ashby, Mrs. Langtry, Prince Bismarck, Jas. Stevens, and Thomas Hobbs. Mr. Shaw, Kidderminster, was second, and Messrs. Heath third. This was a good class, as was also that for twenty-four Dahlias, Messrs. Heath and Mr. Shaw again winning, with Mr. E. Wright third. Single Dahlias were less attractive, the classes not being over well filled. Mr. W. Shaw won first and second for eighteen Gladiolus spikes, good in form and colour. Many of the Asters were damaged by the weather. Phloxes were showy, but small in spike, and Carnations and Picotees were grand. Messrs. Hans Niemand & Co., Birmingham, were the best and most fortunate exhibitors. Their twelve first prize Carnations consisted of H. Cannell, J. D. Hextall, J. Douglas, George, Squire Potts, Lady Curzon, Sarah Payne, Admiral Curzon, Rose of Stapleford, Joseph Lakin, and Mrs. Erskin Wemyss—a grand stand. Mr. A. E. W. Darby, Little Ness, Shrewsbury, was second, and Mr. W. Adams third. In Picotees Messrs. Niemand were also first with a superb stand of the following—Burnette, Beauty of Plumstead, Mrs. Sharp, Zerlina, Mrs. Lord, Mrs. Horner, Mrs. Rudd, Dr. Epps, Favourite, Mrs. A. Chancellor, Clara Penson, and Campanini. Mr. Darby and Mr. Adams were the other winners.

Another attraction close to these were the bunches of stove or greenhouse flowers, and Mr. Blair, gardener to the Duke of Sutherland, Trentham, was awarded first with a magnificent collection, composed chiefly of Orchids. The bunches of hardy herbaceous flowers were also conspicuous, Messrs. Pritchard being first, Messrs. Heath second, and Messrs. Niemand third. Bouquets were very numerous, Messrs. Perkins being first for both the ball and bridal arrangement with exquisite productions, and Messrs. Jones & Sons, Shrewsbury, and Messrs. Niemand followed in both cases. In the amateur section for the same kind of bouquets Mr. Blair won two firsts with grand specimens composed chiefly of Orchids, and Mr. G. Townsend was second. The stands of cut flowers for the table were fair, and the buttonhole flowers not striking. The stands and baskets of wild flowers occupied much space, were highly attractive, the principal prizewinners being Miss Hudson, Miss Kittermaster, Miss Beaman, and Miss Myers.

Fruit.—Grapes were not so numerous as last year, but many of the specimens were up to the average of former years. The opening class in fruit reads thus:—"Six bunches of black Grapes, two bunches of three varieties. First prize, £10; second ditto, £6; third ditto, £3." Truly a tempting paragraph and one likely to bring some good fruit, which it did. Mr. J. Stevenson, gardener to Col. Pilkington. Prescot, being first with Black Hamburgh, grandly finished; Madresfield Court, ripe and well formed, and Alicante, of fine colour, rather small in berry. Mr. Pratt, Longleat, was second with Alicante large, Gros Maroc very good, and Black Hamburgh of fine proportions but slightly deficient in colour. Third, Mr. Dawes, gardener to the Hon. Mrs. Ingram, Temple Newsam, Leeds, with Black Hamburgh, Madresfield Court, and Muscat Hamburgh in fine condition. In the class for three bunches of Black Hamburghs Mr. Stevenson was first with grandly finished bunches, the colour being perfect. Mr. Brownhill, Rockferry, came second with large berries, but slightly deficient in finish; and Mr. G. Raynes, Rockferry, third. Some fine fruit was shown in the class for any other black Grape, and the Hon. Charles Wynn, Rhug, Merionethshire, was first with Alnwick Seedling, fine in cluster, dense and perfect in colour, but slightly small in berry. Second, Mr. Raynes with Madresfield Court, too brown. Third, Mr. Stevenson with the same variety, fine in bunch.

Mr. Pratt was first for four bunches of white Grapes with Foster's Seedling and Muscat of Alexandria, the latter being the best in the Show. Mr. Stevenson came second with the same varieties not so ripe, and Mr. G. Raynes third. Mr. Pratt was also first for three bunches of white Grapes with Muscat of Alexandria, large in bunch, fine in berry, and grandly coloured; Mr. R. Pilkington came second and Mr. Brownhill third. In the class for three bunches of any other white Grape the Hon. Charles Wynn was an easy first with three superb bunches of Duke of Buccleuch, and Mrs. Marly, Baschurch, second with Buckland Sweetwater. In the class for four bunches of black Grapes open to the county of Salop, Mr. Beattie, Wellington, was first with Black Hamburgh, good, and Alicante misnamed Black Tokay. Mr. Lambert second with Black Hamburgh and Muscat Hamburgh, both good. Third, Mr. Milner, small berries, fine colour. In the corresponding class for white Grapes Mr. Lambert was first and Mr. Milner second. Grapes were well shown in the amateur classes by Mr. Humphreys, Shrewsbury; Mr. Hale, Birkenhead; Mr. Burr, Oaklands; and Mr. Barker. On one stand a poor sample of Buckland Sweetwater was named "Dukeabaclach."

Collection of fruit, twelve dishes, to include two black and two white Grapes, two bunches of each, one Melon and one Pine Apple, first prize, £10; second, £6; third, £3. There was keen competition here, many well known growers exhibiting, but the old hands were rather out of it, as the first prize was well won by Mr. Dawes of Temple Newsam, who staged splendid samples of the following—Black Hamburgh, Muscat of Alexandria, Foster's Seedling, and Gros Guillaume Grapes, the latter weighing about 9 lbs. per bunch, with huge berries, well coloured and finely finished; Rivers' Orange Nectarine, Royal George Peach, seedling Melon, Queen Pine, Brown Turkey Fig, James Veitch Strawberry, Roman Apricot, and Late Duke Cherry—a fine collection. Mr. Goodacre, gardener to the Earl of Harrington, Elvaston, Derby, was second with a weighty collection, in which Muscat Hamburgh and Foster's Seedling were hardly up in colour, but Muscat of Alexandria fine; a grand Queen Pine, splendid Circassian Cherries, and good Elruge Nectarines. Mr. Pratt was third with good Grapes, but two bunches were badly matched, one being double the weight of the other. Mr. Gilman, gardener to the Earl of Shrewsbury, Ingestrie, was fourth, his Barrington Peaches being remarkably fine. In the collection of nine dishes of fruit, confined to Salop, Mr. Lambert was first with capital Muscat of Alexandria and Black Hamburgh Grapes, Apricots, Royal George Peach, large Gooseberries, Early Golden Drop Plum, and Humboldt Nectarine. Mr. Beatie second, and Mr. Milner third. In Peaches Mr. Gilman had no difficulty in securing first prize with splendid Barringtons. Another dish still larger than these but poorly coloured did not gain a prize. Pine Apple Nectarine was first, Lord Napier second, and Pine Apple third. Plums and Apricots were few. Melons came out in goodly numbers. For the best green-fleshed variety Mr. Goodacre was first, Mr. Owen second, and Mr. Pratt third, all unnamed. In scarlet-flesh Blenheim Orange secured the leading prizes. Messrs. Sutton & Sons, Reading, offered prizes for their well known Melons, and these were secured by Mr. Waite, gardener to Col. Talbot, Glenhurst, Surrey; Mr. Barlass, Derby; and Mr. Owen.

Vegetables.—Unusual interest was attached to this section, as a Veitch Memorial medal and prize of £5 was offered for the best collection of twelve sorts. This, we believe, is the first time it has been given for vegetables; it could not be offered in a better place than Shrewsbury, and the competition was exceedingly keen and highly creditable. Fourteen collections were staged, and after much careful inspection the Judges awarded the coveted medal to Mr. Lambert of Onslow. This collection was beautifully staged, and the produce was excellent. It consisted of Webb's Banbury Onion, Veitch's Prodigy Pea, Laxton's Czar Runner Bean, Lyon Leek, Intermediate Carrot, Globe Artichoke, Veitch's Autumn Cauliflower, Telegraph Cucumber, Prime Minister Potato, Snowball Turnip, Clarke's red Celery, and Webb's Sensation Tomato. Every dish would have taken a prize in the single classes, and it is a collection of this kind that always tells. Mr. Waite was second; and Mr. Wilkins, gardener to Lady Blandford, third. The next collection was confined to Salop, and here Mr. Lambert was again first; Mr. Corefield, Seaton Knowls, second; and Mr. Farrant third. Potatoes were extensively staged, Mr. Lambert being first for six dishes with Prime Minister, Edgecote Purple, Ashtop Fluke, Sutton's Seedling, Cardmant, and Chancellor, large, even, and clean. Mr. Waite was second, and Mr. Barrington third. Tomatoes, Peas, Cauliflowers, Beans, Onions, Carrots, Celery, &c., were exhibited in great numbers, and the principal prizetakers were Mr. Lambert, Mr. Waite, Mr. Milner, Mr. Cook, Cheltenham; Mr. Davies, Cruckton Hall; Mr. Wilkins, Mr. Lowe, Shrewsbury; Rev. H. Arkwright, and Mr. Barr.

Amongst special prizes the handsome sums offered by Messrs. Webb and Sons, Wordsley, Stourbridge, brought almost as fine a competition as for the Veitch prizes, twelve collections of eight dishes being staged. Mr. Waite secured the first place with finely grown specimens of White

Tripoli Onion, Veitch's Autumn Cauliflower, Intermediate Carrot, Webb's Sensation Tomato, Duke of Albany Pea, Ne Plus Ultra Runner Bean, Clarke's red Celery, and Stourbridge Glory Potato. Second, Mr. Lambert; third, Mr. Skinner, Cheltenham; fourth, Mr. Corfield; fifth, Mr. Wilkins; and several other highly meritorious collections had to be left out. Messrs. Sutton's Cucumber prizes were won by Mr. Skinner, Lord Berwick, Mr. Dick, and Mr. Wyley, Shrewsbury. Mrs. Williams, Dorset; Mr. Waite, Mr. Edwards, Acton Burnell, and Mr. Skinner were the winners for Perfection Tomato, and Mr. Lambert and Mr. Waite for Sutton's Early Gem Carrot. Mr. Thomas Laxton offered prizes for his new Peas, Czar Runner Beans, and Potatoes, and some fine produce was staged by Mr. Lambert, Mr. Milner, and one or two others. The cottagers had a spacious tent all to themselves. The tables overflowed, and the produce in all classes was excellent. This is a department in which some of the surplus funds of the Society might advantageously be spent, as 10s. as a first prize for a collection of eight kinds of vegetables cannot be regarded as handsome or remunerative.

Miscellaneous Exhibits.—Local nurserymen, as well as those from a distance, staged many good things, which added considerably to the attractions of the Show. Mr. Murrell of Shrewsbury filled a large table with Tuberous Begonias. There were several boxes of excellent cut Roses in the centre, with the Begonias at the back and wings. They were not shown as single blooms, but fine plants profusely bloomed, the varieties good, and Maidenhair Ferns were mingled with them in such a way as to hide all the pots. This was a splendid table. Messrs. Cannell and Sons, Swanley, Kent, exhibited a grand group of cut Begonias. The double forms of these were almost as large as Hollyhock flowers, and were the finest ever seen in Shrewsbury. Their single and Cactus Dahlias and double and single Pelargonium flowers were also admirable. Messrs. Richard Smith & Co., Worcester, staged large quantities of plants and cut Roses and herbaceous flowers. Messrs. Clibran & Son, Altrincham, were also large and meritorious exhibitors in these classes. Messrs. Laing, Forest Hill, had a grand collection of Begonia flowers. Messrs. Kelway, Langport, eclipsed all with their Gladiolus, which were wonderfully good, and Messrs. Dicksons & Co., Limited, staged many grand plants and cut flowers, amongst the latter being several fine bunches of Mrs. Reynolds Hole Carnation. Messrs. Jones, Shrewsbury, and Messrs. Pritchard kept up their reputation in this section, as did also Mr. Myers; and Messrs. Dobbie & Co., Rothesay, N.B., had a stand of their specialities, on which Leeks, Turnips, Parsley, Marigolds, and Pansies and Violas were highly attractive. Messrs. Webb & Sons displayed samples of their leading vegetables, Banbury and other Onions, Leeks, and Emperor Cabbage, hosts of Peas and numerous Lettuce being excellent, and the dish of Sensation Tomato was the finest in the Show.

NEWCASTLE-ON-TYNE.

The Durham, Northumberland, and Newcastle-on-Tyne Botanical and Horticultural Society held their sixty-fifth Exhibition on Wednesday, Thursday, and Friday last in the Leazes Park, Newcastle. It seems almost impossible for the Society to be fortunate enough to secure good weather. The Show this season was about a month later, still with no better success, This is really a pity, as last year the Society was able to hold their show in the grounds of the Newcastle Exhibition, which took them out of debt, and secured a balance in hand of about £300. The present Exhibition, occurring in such extremely bad weather, will be the cause of putting the Society into debt again to the extent of about £50. As regards the merits of the Exhibition it is almost impossible to be too laudatory concerning the stove and greenhouse plants, which were magnificent examples of culture. The fruit was exceptionally fine in all classes. The florist-flowers, especially Roses, were well represented, Dahlias and Gladiolus being not so numerous, owing, no doubt, to the extraordinary season. Appended is a record of the successful exhibitors.

In division A, which is open to all, for eight plants in bloom, dissimilar, Mr. E. H. Letts, gardener to the Earl of Zetland, Upleatham, was first with eight superb plants of finished culture; these included Erica Jacksoni, 5 to 6 feet through; E. ferruginea Bothwelliana and E. Marnockiana, all equally good and bright in colour, the plants symmetrically trained, although not too formal or stiff; Phœnocoma prolifera Barnesi, 6 to 7 feet through, of a remarkably deep rich crimson; a fine Lapageria alba, with 200 blooms; Anthurium Schertzerianum, and a grand Allamanda nobilis, completed the eight. Mr. H. Johnson, gardener to J. B. Hodgkin, Esq., Elmridge, Darlington, was second with creditable examples of Ixora Dixiana and I. Williamsi, Erica tricolor Wilsoni, E. Eweriana superba, and Allamanda Schotti, very good. Mr. E. Adams, Swalwell, was third, his best plant being a good specimen of Phœnocoma prolifera Barnesi.

In the corresponding class, B, Mr. A. Methven, gardener to T. Lange, Esq., Heathfield House, Low Fell, Gateshead, was first with an Erica Exquisite, 6 feet through, profusely flowered; Stephanotis floribunda, Allamanda Hendersoni, Anthurium Schertzerianum, and Erica æmula. Mr. E. Adams was second with Phœnocoma prolifera Barnesi, Statice profusa, and Erica Aitonia superba. For eight foliage plants Mr. E. H. Letts was again first with noble examples, his Cycas circinalis, C. revoluta, Encephalartos Altesteini, Dion edule, and Kentia Fosteriana towered majestically over the Gleichenia rupestris glaucescens, with Crotons Johannis and angustifolius; the two latter as regards colour were as good as the most fastidious admirers of Crotons could desire. Mr. J. McIntyre, Woodside, Darlington, was second with good plants, showing a handsome Croton, Cycas revoluta, C. circinalis, and Cordyline indivisa. Mr. A. Methven was here third, his best plant was a good Croton Weismanni, and in the corresponding class, B, he was first for six foliage plants, including Kentia Fosteriana, Cycas revoluta, an Encephalartos, Croton Morti, and Cordyline indivisa. For six exotic Ferns Mr. H. Johnson was first, Davallia Mooreana, truly grand, 8 feet; Dicksonia antarctica, Microlepia hirta cristata, Davallia fijiensis, and Gleichenia Mendelli. Mr. McIntyre in this class was second, and a good first in the corresponding class for six, including Pteris Cowani, Adiantum dceorum, and A. cuneatum. For four Ericas Mr. E. H. Letts followed up his usual success, and seldom, if ever, have Ericas been shown better; these included Erica tricolor Wilsoni and E. Turnbulli. Mr. Johnson was second and first in the B class for three Ericas, including E. æmula, E. McNabiana and E. ferruginea superba.

Table Decorations, Cut Flowers.—Dessert table, 10 feet by 5 feet 4. This only brought two competitors. Mr. O. Lamb, gardener to C. E. Hunter, Esq., South Hill, was first with a very fine table, on which was one centrepiece, two end pieces, four semicircular glasses, eight small or thumb glasses, and eight dishes of fruit. The glasses were of the newest pattern, a *fac-simile* set of which has been supplied to Her Majesty recently. The centre was most effectively filled with Francoa ramosa, Water Lilies, Dipladenia boliviensis, Ixoras, Anthurium Andreanum, and other choice flowers, all lightly and harmoniously blended together. Mr. F. Gillender, florist, Grey Street, was second; his centre contained very choice flowers, but much too heavy. For a vase or epergne Mrs. E. Adams was first amongst five competitors, Mr. F. Edmondson, Green Market, Newcastle, second, and Mr. Rutherford, Leazes, Durham, third, all good. For the basket of cut flowers there was a good competition, Messrs. Perkins & Sons, Coventry, being first, in which Odontoglossum Alexandræ figured conspicuously, and the handle was draped with Lygodium scandens; Mr. J. R. Chard was second. For the bridal bouquet Messrs. Perkins were again first. Caladium argyrites was employed with much effect, and amongst the flowers were Stephanotis, Tuberoses, Niphetos Roses, and Eucharis Mastersi, which seems quite an acquisition. For a hand bouquet the former winner was also first; Dipladenia Brearleyana, Oncidium flexuosum, Eucharis, and white Lapagerias were employed with Francoa ramosa. Mr. J. R. Chard was second with good bouquet of Cattleya Mossiæ. For the ladies' spray, a new idea at Newcastle, Messrs. Perkins were also again first with a most charming combination of Oncidium flexuosum, Epidendrum vitellinum, Odontoglossum Alexandræ, and Caladium argyrites. Mr. J. R. Chard second. Buttonholes always form a strong class, Mr. Geo. Corbett winning with a tasteful arrangement of Hoya bella, Forget-me-nots, Bouvardias, Tuberoses, with Adiantum gracillimum. Mr. J. R. Chard was second with Epidendrum vitellinum, Odontoglossum Alexandræ, &c. In the corresponding class, B, Mr. Jos. Punton was first for an epergne; for a basket of cut flowers Mr. Geo. Corbett; and for a bridal bouquet Mr. F. Edmondson, the latter consisting of Lilium Harrisi, Francoa ramosa, Niphetos Roses, Gardenias, Tuberoses, all fringed with Adiantum gracillimum. Mr. Geo. Webster was second; and for a hand bouquet Mr. T. Battensby was first.

Cut Flowers.—With twenty-four Dahlias, dissimilar, fancies excluded, there were five competitors, Messrs. Henry Clark & Son, Rodley, Leeds, being first with exceptionally good blooms for the season, fine in form, of good colour, and outline well defined; these included J. Henshaw, James Cocker, J. T. West, Earl Ravensworth, Prof. Gooday, Vice-President, Wm. Rawlinson, J. N. Keynes, Goldfinder, Antagonist, and two or three promising seedlings. Mr. N. Walker, Low Fell, Gateshead, was second with smaller flowers. The season has evidently told against this well-known north country exhibitor. There were four collections of twenty-fours. For twelve fancies, Messrs. H. Clark were again first for twelve fancies, including J. Forbes (splendid), W. Saunders, A. T. Barron, General Gordon, and J. B. Camm. Mr. C. Hockey was second. Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham, London, offered £5 for the best collection of Cactus Dahlias, which brought forth no competition.

For twenty-four Hollyhocks the Society offered £10 in four prizes of £4, £3, £2, and £1, and the Royal Horticultural Society's bronze medal for first. Messrs. Webb & Brand, Saffron Walden, were first, including flowers of Crimson Queen, Queen of Yellow, Joy, Purple Queen, Constance, Alfred Charles, nobilis, Prince Arthur, Golden Drop, Fire King, and two or three seedlings. Mr. Richard Mann, Howden Dyke, was second; and in the class B, for twelve flowers, Mr. R. Mann was first with Purple Prince, Lady Winn, Excelsior, Scarlet Gem, Princess Louise, John Kaye, and also second. For eighteen spikes of Gladioli Messrs. Harkness & Sons, Bedale, were first, including Shakespeare, Valtevaredo, Dahlia Dido, and several seedlings. Messrs. Mack & Son were second. For twenty-four Roses, not less than twelve varieties, Messrs. Harkness and Sons were deservedly first; for richness of colour and substance the blooms were much admired, and most deservedly. Their best flowers were Etienne Levet (splendid), Lady Hoffir, A. K. Williams, Catherine Mermet, Lady Fitzwilliam, Devoniensis, Paul Neron, &c. Messrs. Perkins & Son were second with Maréchal Niel, good for the season; Alfred Colomb, A. K. Williams, and Louis Van Houtte.

For eighteen bunches of herbaceous flowers, Mr. T. Short, gardener to Arthur Pease, Esq., Darlington, was first. These are always shown well at Newcastle. On the stands were Lilium chalcedonicum, Chrysanthemum maximum, Lythrum roseum superbum, Delphinium M. Barrel, Phlox B. S. Williams, and Alstromeria. Messrs. Harkness & Son were second with Lilium Harrisi, Achillea Ptarmica, Chrysanthemum maximum, Papaver nudicaule miniatum, Erigeron speciosum, Helianthus miniatus plenus, and Centaurea montana. This was a splendid stand, and by many considered equal to the first, except that the former was

more effectively staged. Mr. J. Battensby was third also with a very good stand. For twelve bunches of cut flowers Mr. Geo. Duncan, gardener to C. H. Wilson, Esq., M.P., was first with Bougainvillea glabra, Vallota purpurea, Eucharis grandiflora, Clerodendron fallax, Calanthe veratrifolia, Cattleya crispa, and Lapageria rosea. In the B class, Mr. Duncan was also first for cut flowers. Pansies were shown well, Messrs. Bailey & Sons, Sunderland, being very successful.

Fruit.—For a collection of twelve dishes of fruit the Society offered £20. Mr. J. McIndoe, gardener to Sir Jos. Pease, Hutton Hall, Guisborough, was first with Gros Maroc and Golden Champion Grapes, a handsome Pine, Galande Peaches, Darwin Nectarines, Plums, Frogmore Cherries, Apricots, large early Ribston Pippin, and Clapp's Favourite Pear. Grapes and Pine Apples were the leading features. Mr. J. Hunter, Lambton Castle Gardens, was second with Black Hamburgh and Canon Hall Grapes, Smooth Cayenne Pine, early Grosse Mignonne Peaches, Souvenir du Congrès Pear, white Magnum Bonum Plums, Worcester Pearmain Apples, Melon Harefield Grove, Negro Largo Figs, and the fruit of the Sago Palm. For eight dishes these exhibitors reversed their positions, Mr. Hunter showing Canon Hall Grapes, Black Hamburgh Grapes, Grosse Mignonne Peaches, and Souvenir du Congrès Pears. Mr. Mc Indoe was second with Duke of Buccleuch and Black Hamburgh Grapes, Golden Eagle Peaches, Williams' Bon Chrêtien Pears, Elruge Nectarines, &c. Mr. P. Westcott, Raby, was third, showing good dishes of Black Hamburgh, Bowood Muscat Grapes, Spencer Nectarines, Royal George Peaches, &c.

For four dishes, Pines excluded, Mr. Hunter followed up his former success, showing Black Hamburgh Grapes, very fine; Marie Louise Pears, Lockinge Hero Melon, and Apples. For six dishes of hardy fruits Mr. J. Short was first and Mr. Westcott second. For six bunches of Grapes, not less than three varieties, Mr. J. Hunter was also first again with fine even finished fruit of Golden Champion, 4 lbs.; Alnwick Seedling, Alicante, and Muscat of Alexandria Grapes. Mr. McIndoe took the second place with Golden Champion, Gros Maroc, and Black Hamburgh. For two bunches of black Grapes there were eight competitors, Mr. C. Portsmouth, Rectory, Morpeth, being first. For Black Alicante Grapes Mr. J. Hunter was first and Mr. Witherspoon second. For two bunches of any sort Mr. Witherspoon was also first amongst seven competitors, and the same exhibitor took the first place for Buckland Sweetwater as well. For white Grapes, any sort, Mr. J. Hunter was first with Duke of Buccleuch. Melons were a most extraordinary show, the first prize falling to Mr. F. Clarke amongst nineteen exhibitors. Mr. Wm. Jenkins won the first place for Peaches, Mr. J. Riddell was first for Nectarines, and Mr. R. Westcott first for Apricots. Mr. W. J. Watson and Messrs. Tring, local nurserymen, gave prizes for collections of vegetables. There were five competitors, Mr. Simon Bulmer, Scotswood-on-Tyne, winning with a very fine collection.

Not for Competition.—A stand of Poppies, including Papaver nudicaule and alba, and miniatum, was shown by Messrs. Harkness and Sons, and the flowers were much admired for the softness of their colour. The Society awarded a special certificate for them. The same firm also exhibited stands of Roses, and received a special certificate for them. Messrs. Wm. Fell & Co., Hexham, exhibited a special stand of Coniferæ, highly coloured and well grown, including such varieties as Juniperus japonica aurea, Cupressus Lawsoniana, Thujopsis borealis compacta, Retinospora, Thujopsis plumosa aurea, and the ever lovely Chamæcyparis sphæroidea aurea. Mr. W. R. Armstrong, High Cross, Elswick, exhibited a fine stand of stove and greenhouse plants, including specimen Lapagerias, Crotons, and Palms. Messrs. Little & Ballantyne also had a similar collection. These exhibits compensated for the Society not offering prizes for groups of plants this year. Messrs. Clark Bros., Carlisle, exhibited six stands of Carnations. Messrs. J. Robson, Hexham, showed a good stand of greenhouse and stove plants, and Whinham's Industry Gooseberry, three years old, bearing profusely. Messrs. Kent and Bryden, Darlington, showed an excellent stand of herbaceous plants, including many rare and choice varieties.

After the judging was completed the Committee and Judges lunched in an adjoining tent. The Treasurer, Alderman Grey, was in the chair, supported by the Mayors of the neighbouring boroughs, and Sir Jos. Terry from York. The Judges, in replying to their toast, complimented the staging Committee on the effective way they had discharged duties in rendering every assistance necessary to the Judges, and particularly mentioned Mr. Ed. Wilson's name. In conclusion also a word of praise is due to the exertions of the Secretary, who is indefatigable in his duties. With such officers as he and the respected Treasurer the Society need have no fear for the future, despite the unfavourable weather this year.

RYDE, ISLE OF WIGHT.

Much public spirit is displayed in this fashionable yachting town; throughout the season various fêtes are organised and successfully carried out by an energetic body of gentlemen called the Ryde Sports and Amusements Association. It is very gratifying to know that horticulture has a prominent place in the programme. The Rose Show in June, the Show under notice, and the Chrysanthemum Show in November, being all managed and arranged very satisfactorily by the above Association. The Exhibition was held on Thursday, August 23rd, in the beautiful and sloping terrace gardens, by kind permission of Mr. G. Pack. The Exhibition was opened by the Mayor and Corporation, and the gardens were illuminated in the evening. Two marquees were filled with various exhibits, and the cottagers' vegetables were arranged on a long row of tables under the shady Elms.

The chief exhibitors in the plant classes were Mr. Earle, gardener to Henley Grose Smith, Esq., The Priory, St. Helens, and Mr. Wilkins gardener to W. S. Ridley, Esq., The Castle, St. Helens; the former taking first in stove and greenhouse flowering plants, and the latter first with ornamental foliage plants. For a group arranged for effect Mr. Earle was again first with an arrangement of Palms and Ferns intermixed with Oncidiums and other Orchids. Mr. Wilkins was a close second, with J. O. Brooks, Esq., Fernside, third. Mr. Earle was also first with six exotic Ferns with a fresh collection containing good plants of Davallia Mooreana, Dicksonia antarctica, &c., Mr. Wilkins following closely with larger plants. Mr. Wilkins took the lead in both classes for table plants, and also in the class for six Coleuses, and his six Cockscombs that won the first prize was one of the features in the Show, being dwarf and fully developed.

The several classes for cut flowers was well contested, the orange shades of the cut Marigolds toning down the gaudy and bright flowers of Zonal Pelargoniums, both of which were very striking features. Mr. G. Barton took the lead with the African and likewise with the French Marigolds with some fine massive blooms, and Mr. J. Attrill, Mr. G. Pack, Mr. H. Quinton, and J. O. Brook, Esq., took the prizes for the cut Pelargoniums. The cut Zinnias was the best we have seen for a long time, the prizes being awarded to Messrs. Blake, Barnes, and Attrill. There were also good competition for six distinct varieties of annuals in bunches, and Dahlias, Asters, Phlox, Gladiolus were all more or less represented by good stands of blooms.

The best bouquet in the Show was one not for competition sent by Messrs. W. & G. Drover, Fareham, consisting of Gardenias, Stephanotis, Tea Roses, and other choice white flowers; this was presented in the evening to the Mayoress. The best competing one was from Mr. J. Banting, Shanklin, who was also first for three beautifully arranged ladies' sprays. For six buttonholes Mr. Attrill was first and Mr. Earl second. Mr. Attrill was also first for a wreath of white flowers, Mr. Jeffrey second, and Mr. Dunning third. The gipsy baskets filled with flowers had a very pretty effect, Miss Brook being first with an elegant arrangement, Mr. Quinton second, with Mrs. Morris third. In competition for a design for a summer screen for a fire stove, to be composed of everlasting or dried flowers and grasses, some very effective and elegant arrangements were shown. Mrs. E. Brook, High Street, and Miss Brook taking the prizes with most artistic arrangements. Special prizes were offered by Professor Simmonds, the Chairman, for the best floral representation of the Union Jack, in a tray 36 inches by 25 inches. There were four entries, making a very gay effect and causing quite an excitement amongst the company, and ultimately proved a very ticklish thing for the Judges to deal with, the one first selected by them being technically wrong in the width of the white stripes, and their decision had ultimately to be reversed, Miss Nutt taking the first, Mr. G. H. Kent the second, and Mr. F. C. Price the third. The subjects employed in the several exhibits being individual flowers in sand, of scarlet Pelargoniums for the main stripes, white Pelargoniums, white Stocks, and Achillea Ptarmica fl. pl. for the white bordering, with a blue groundwork of the deep coloured Cornockle, the latter being used in all the designs.

With a few exceptions the fruit was only moderate. Mr. Richards, gardener to Mrs. Norton, Bonchurch, taking the prize for the two heaviest bunches of Grapes, and also the first in the other two classes for black and white Grapes; Mr. A. Tolly, St. Helens, and Mr. G. Burden, being the chief exhibitors for Peaches, Nectarines, and other fruits, Mr. C. Martin taking the first prize for a Melon.

Vegetables on the contrary were very good both in the professional and cottagers' classes. Mr. Richards, Bonchurch, was first for a collection; Mr. Charles Orchard, Shanklin; Mr. Pionchon, Shanklin; Mr. Williams and Mr. Lipscombe being the chief prizetakers for the single dishes. International, Snowflake, and Ashleaf Kinleys were represented by good dishes, and Schoolmaster, Village Blacksmith, and Sutton's Seedling were also well shown.—C. O.

BASINGSTOKE.—August 23rd.

The twelfth Exhibition of the above Society was held in the "Goldings" on the date named, and was horticulturally a great success. The entries were numerous, while the quality of the exhibits was in most instances quite up to the average. The vegetables are always of high order of merit at this Exhibition. The competition in the leading class—that for twelve varieties—was exceedingly keen, the exhibits being of high quality. Plants and groups were noteworthy features. Amateurs and cottagers produced a capital display. The arrangements worked smoothly under the personal charge of Mr. Weeks, the energetic Secretary.

Plants.—The principal class was that for twelve specimens in or out of bloom, which brought four competitors, and produced a capital display. First honours fell to Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, Basingstoke, who staged a freely flowered Allamanda Hendersoni, Ixora Williamsi, and Eucharis grandiflora, with Cycas revoluta (fine) and Croton Queen Victoria. Mr. F. Mould, Pewsey, Wilts, was second, staging smaller specimens of Erica retorta major, E. Irbyana, and E. obbata purpurea. Mr. Russell, gardener to W. Bradshaw, Esq., Audleys Wood, was third. For six stove and greenhouse plants in flower three entered, Mr. Mould being first with Allamanda grandiflora, Erica Austiniana, E. Irbyana, and E. Turnbulli as his best specimens. Mr. B. Tripp, gardener to Mrs. Field, Goldings, Basingstoke, was second. For the same number of foliage plants Mr. Bowerman was easily first, Mr. B. Tripp being second. For one specimen stove or greenhouse plant in bloom, Mr. T. Weaver, gardener to

W. W. B. Beach, Esq., Oakley Hall, Basingstoke, staged a magnificent one of Eucharis grandiflora, bearing fifty-three spikes of bloom. With a very fine Fuchsia from 7 feet to 8 feet high, 5 feet wide at the base, freely flowered and loosely trained, Mr. T. Russell was second. The best exotic Ferns came from Mr. Weaver, and healthy specimens they were, of fair size. The best hardy Ferns came from Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, Basingstoke. Fuchsias were well staged by Mr. Russell. Mr. T Best, gardener to C. W. Chute, Esq., had the best table plants, closely followed by Mr. Kneller.

For a miscellaneous group of plants for effect, not to exceed 16 feet the £5 5s. was the leading prize. Mr. Weaver was easily first with a bright yet light arrangement of suitable well-grown plants. Second, Mr. Dauncey, gardener to T. Beckford, Esq., Buckfield, Basingstoke, with a somewhat heavier arrangement. Coleus were well staged by Mr. D. Eckett, gardener to R. Blencowe, Esq., being freely grown and well coloured.

Cut Flowers.—For twelve Roses Mr. Dauncey was first, staging neat, small blooms. For twelve Dahlias, distinct, Mr. Bowerman was first with even, neat, well formed blooms, and also first for twelve quilled Asters, while Mr. Kneller took first honours for twelve bunches of cut flowers, distinct, with a neat, choice lot. The best twelve varieties of hardy herbaceous, Mr. Bowerman was a good first, staging an even stand of good varieties.

Fruit.—One exhibitor (Mr. Best) had a collection of six dishes, Pines to be excluded. Black Hamburgh Grapes, Peaches, and Nectarines were his best. For two bunches of Black Hamburgh Grapes six competed, the best coming from Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershawe Park, Chertsey, with shapely bunches having good berries and colour. Second, Mr. Bowerman with smaller bunches. Third, Mr. Kneller. For two bunches any other black Grape Mr. Kneller staged Gros Maroc with very fine berries, medium bunches, only wanting more time to make them perfect. Second, Mr. Osman with Alicante. Third, Mr. Bowerman. Mr. Kneller was first with the best two bunches of white Grapes other than Muscats with Buckland Sweetwater. Mr. Osman second. The last named competitor staged the best Muscat of Alexandria in that class, good shapely bunches, even berries, and colour fair. The best green-flesh Melon, Longleat Perfection, was staged by Mr. Kneller, while Mr. Bowerman had the first card for scarlet Melon with Blenheim Orange, and also the first for a dish of Nectarines, well coloured fruits of Elruge, Mr. Dauncey being second. Mr. Russell was first for a dish of Peaches with Noblesse, Mr. Dauncey being second.

Vegetables.—For a collection of twelve varieties, not more than two kinds of Potatoes allowed, there were five entries. After a close inspection the leading position was accorded to Mr. R. Lye, gardener to W. H. Kingsmill, Esq., who staged Reading Perfection Tomatoes, Duke of Albany Pea, Rousham Park Onion, Sutton's White Gem Snowball Turnips, Prime Minister Potato, Ne Plus Ultra Bean, and Autumn Giant Cauliflowers as his most noteworthy dishes. Mr. Kneller was an exceedingly close second, losing only by one point. Tomatoes Reading Perfection, Matchless Marrowfat Peas, and Snowdrop Potato were his best. Third, Mr. Bowerman. Mr. Kneller took the leading prize for six varieties, the prize being given by Messrs. Webb & Sons, Rousham Park Onion being especially fine. Mr. Lye was second. The same competitors held the same positions for six varieties, the prizes given by Messrs. Sutton & Sons, with good quality produce. Mr. Kneller followed up his previous successes by taking first honours for spring-sown Onions and for best brace of Cucumbers, both good. For a collection of nine distinct varieties of Potatoes, nine tubers of each, Mr. F. W. Geers, gardener to Captain Oldfield, was first with large even clean tubers of leading kinds. Mr. Dauncey second.

Messrs. Sutton & Sons were awarded a certificate of merit for a new netted Gloxinia, very attractive in appearance, bearing large erect blooms. This firm also staged an extensive collection of hardy herbaceous flowers and annuals.

SALISBURY.—August 23rd.

Fortunate indeed are those managers of horticultural societies who during a season so unpropitious as the present one are favoured with fine weather for their annual show. It seemed at one time that the Show held in the Bishop's Palace grounds on the above date was doomed to be a failure, as the morning broke with a leaden sky and heavy rain, but the weather steadily improved, the afternoon being fine. The attendance was large, and the Show a pronounced success in every way. The high quality of the exhibits throughout showed a decided advance upon those staged at any previous show held in the famous cathedral city, even in the palmy days of "the old society," from the ruins of which the present one has been so rapidly built up, thanks to the untiring efforts of Mr. W. H. Williams, the Honorary Secretary, and the excellent Committee who assist him.

In the principal class £15, £10, and £5 were offered for twelve stove and greenhouse plants, six foliage, and six flowering. Three well-known exhibitors competed for these prizes. Mr. G. Loek, gardener to W. B. Cleave, Esq., Crediton, was a good first, his flowering plants being large, fresh, and densely flowered, and the foliaged ones of great size and rich colour; the most noteworthy among them being Erica Eweriana, a magnificent plant from 4 to 5 feet over; Erica æmula, a perfect mass of flower; Clerodendron Balfourianum, large and fresh; and Bougainvillea glabra in first-rate condition. Among foliaged plants were grand examples of Encephalartos villosus ampliatus, Cycas circinalis, and a tremendous Latania borbonica. Crotons were represented by grand specimens of C. Warreni and C. Williamsi, remarkably well coloured. Mr. J. Cypher, Cheltenham, was second, his plants being smaller throughout, but very fresh and clean. The best specimens were Bougainvillea glabra splendidly flowered, Ixora Fraseri, Erica venosa, and Clerodendron Balfourianum. Third, Mr. Wills, gardener to Mrs. Pearce, Basset, Southampton, whose collection contained a well trained and beautifully flowered specimen of Eriea obbata purpurea. For a group of plants arranged for effect in a semicircular space 12 feet in diameter Mr. Lock again led the way with an arrangement which for elegance, finish, and well-balanced colouring would be hard to surpass. Mr. Wills was second with a bright group, but somewhat formal, and Mr. Wilkins, gardener to Lady Theodore Guest, Henstridge, was third; his groundwork was very well done, but the surface plants scarcely set up enough, and two Caladiums in the background would have been better left out. For six stove and greenhouse plants in bloom Mr. Loek was first, showing medium-sized, even plants of Dipladenia amabilis, Erica Farrieana, Erica Aitoniana, Ixora Duffi, Allamanda Hendersoni, and Phœnocoma prolifera Barnesi. Second, Mr. Williams, Clerodendron Balfourianum and Eucharis grandiflora being his best plants. Mr. Curry, gardener to Colonel Pepper, Milford Hill, Salisbury, was third. Three good groups of six exotic Ferns were shown, Mr. Wills coming in first with good sized even specimens, Mr. Wilkins being a close second, and Mr. Smith, gardener to the Lord Bishop of Salisbury, third with smaller but remarkably fresh specimens.

For six Begonias, distinct, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was easily first with well-flowered even plants. Mr. Wilkins second, and Mr. E. Thornton, gardener to Mrs. Greenwood, Harnham Cliff, Salisbury, was third. Fuchsias were not shown in large numbers, nor were they of great size. Well-flowered specimens secured for Mr. F. Wills the first prize; Beautiful, Charming, and Elegance were the best in his half dozen. Second, Mr. L. Brown, Portland Place, Salisbury.

Five pounds were offered as the first prize for a group of plants arranged for effect in a semicircle 10 feet in diameter, the competition being confined to gentlemen's gardeners. Seven competed, which made quite a display in themselves, all being exceedingly well done. Mr. Lock was again to the front, winning the £5 cup or money given by Messrs. Keynes Williams & Co., of Salisbury, with a graceful arrangement similar to his first prize group in the open classes. Second, Mr. J. Budd, gardener to F. G. Dalgety, Esq., Lockerley Hall, Romsey; Mr. Wills being third. Another class was provided for a group of plants of the same size and shape as the last-named one, but the competition in this case was confined to amateurs within a radius of six miles of Salisbury, the first prize being a cup given by the Mayor of Salisbury, and valued at £5. This was well won by Mr. L. Brown with a light, and in every way beautiful arrangement, the exhibitor having evidently studied the tasteful exhibits in the open classes in previous years. Dr. F. W. Coates was second, his background being very good, but the front too flat; Mr. Lovibond third. For a group of plants arranged for effect, 8 feet in diameter, Mr. Gregory was first, and Mr. Greenwood second. Mr. J. Nightingale, Wilton, was first for six Ferns; Mr. L. Brown, for a like number of Pelargoniums. For four Pelargoniums with variegated foliage Mr. T. S. Fletcher was successful. The six best Coleus came from Mr. G. Smith, Wilton Road, Salisbury; and three very fine pots of Lilium auratum won for Mr. Gregory the first prize.

Fruit.—In many classes this was both numerously and well shown, the black Grapes being especially good; the white ones in some cases showed the effect of the unfavourable season by their rather green appearance. For a collection of eight dishes of fruit Mr. Ward was first, showing fine examples of Madresfield Court Grape, the bunches being of medium size, berries very large and beautifully coloured; Muscat of Alexandria, large bunches fairly well coloured; a well-ripened Smooth Cayenne Pine; fine Scarlet Invincible Melon, Pineapple Nectarines, Goshawk Peaches, Negro Largo Figs, and rather small Apricots. Mr. Evans, gardener to Lady Louisa Ashburton, Melchet Court, Romsey, was a close second. He had well-coloured Black Hamburgh and fairly good Muscat of Alexandria Grapes, a neat Queen Pine, good William Tillery Melon, grand Brunswick Figs, Lord Napier Nectarine, well coloured, but rather small for the variety, Barrington Peaches, and Moor Park Apricots. Mr. A. Miller, gardener to H. W. Long, Esq., M.P., Rood Ashton Park, Trowbridge, was a good third, his collection containing a grand Smooth Cayenne Pine weighing about 7 lbs., but a few of the uppermost pips were rather green. His Nectarines, Figs, and Melon were also very good. Mr. Loek was first for a Pine Apple with a fine Smooth Cayenne, Mr. Ward being a good second with the same variety, and Mr. Evans third with a Queen. Muscat of Alexandria was staged by five exhibitors. Mr. T. Northeast, gardener to Mrs. Torrence, South Bavant, Warminster, was first with large bunches, and berries fairly well coloured. Second, Mr. Haines, gardener to the Earl of Radnor, Coleshill House, Highworth, with compact bunches and large berries. Seven lots were put up in the class for three bunches of Black Hamburgh, the first prize being justly awarded to Mr. Chalk, gardener to G. Read, Esq., Westwood, Salisbury, for splendid examples, being large in bunch and berry, and beautifully coloured. Mr. Ward was second with smaller, but well-coloured bunches; Mr. Inglefield, gardener to Sir John Kelk, Bart., Tedworth House, Marlborough, third. For three bunches for any other white Mr. Ward was a good first with Buckland Sweetwater in good condition, Mr. Haines being second with well-coloured Foster's Seedling, and Mr. W. Neville, gardener to F. W. Flight, Esq., Twyford, third with the same variety. Mr. Ward was again to the front in the class for three bunches of black,

not Hamburgh, showing Gros Maroc, finely coloured; second, Mr. Miller, with Alnwick Seedling. For the best-flavoured Melon Mr. Neville was first with a fine-flavoured fruit of Sutton's Imperial Green Flesh; and Mr. Evans was second with Read's Scarlet Flesh. Five good dishes of Peaches were shown, Mr. Inglefield scoring an easy victory with large, solid, and splendidly coloured fruits of Walburton Admirable; Mr. Budd being second with Barrington. For six Nectarines Mr. W. Browning, gardener to Sir Talbot Baker, Bart., Blandford, was first with Rivers' Orange in perfect condition; Mr. Ward was second with good Pincapple. Mr. Browning was also first for six Apricots, with exceptionally good fruits of Moor Park; Mr. Budd second, and Mr. Miller third; all showing the same variety. Mr. Englefield was first for twelve Plums; Mr. Browning second, and Mr. Budd third. For six dishes of Apples Mr. Browning was first and Mr. Smith second, the last-named being the only exhibitor of four dishes of Pears, and he was awarded the first prize.

VEGETABLES.—The competition in the vegetable classes was very keen, and the quality excellent. For a collection of twelve kinds, after a close contest, the premier position was awarded to Mr. Wilkins, who had fine samples of Advance Cauliflower, Lyon Leek, Standard Bearer Celery, Rousham Park Onions, New Intermediate Carrot, Giant White Beans, and dark red Beet. Mr. Haines was a very close second, showing splendid Reading Perfection Tomatoes, Satisfaction Potato, Anglo-Spanish Onions, Giant White Cauliflower, Jubilee Beans, and Major Clark's Red Celery, as his best dishes. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, was third.

CUT FLOWERS.—Roses were not numerous. Those put up by Mr. Campbell, gardener to Dr. S. P. Budd, Bath, were bright and fresh, though not large. For twenty-four singles trusses, distinct, the above-named was the only exhibitor, and was deservedly awarded the first prize, his best being Louis Van Houtte, Prince Arthur, and Alfred Colomb. For twelve single trusses Dr. D. Seaton, Bitterne, Hants, came in first, having among others good blooms of Captain Christy and Victor Verdier. Mr. Neville was second, and Mr. F. Hatch, Salisbury, was third. For twelve bunches of single Dahlias Messrs. Haskins and Smith secured the prizes in the order named. In the class for twelve Pompons Mr. Haskins, Salisbury, was first, Mr. Hatch was second, the third prize going to Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury. Messrs. Campbell, Hatch, and West received the prizes for twenty-four Asters in the order named. For eighteen bunches of cut flowers, distinct, Mr. Evans was first with a collection well set up, containing good spikes of Cattleya crispa, Saccolabium Blumei majus, and Strelitza Regina. Mr. Budd was a close second, Calanthe veratrifolia, Cattleya crispa, and Thunia alba being his best blooms; third, Mr. Neville. For twelve bunches Mr. Browning was first and Mr. West was second. For eighteen Carnations or Picotees, not less than nine varieties, Mr. M. Gilbert of Bishop's Waltham was a good first; Mr. T. Hatch was second, and Mr. E. Brown third. The winner of the first prize in this class also exhibited fine blooms of a striped border Carnation named Edwin Molyneaux, and as the variety bids fair to be worthy of the name, it fully deserved the certificate of merit which was awarded to it. Mr. Chard, Stoke Newington, was first for a flower vase with one of his best efforts; Miss Bessie Flight was second, and Mr. J. Cypher was third. For two bouquets, one bride's and one ballroom, Mr. Chard was again first, and Mrs. Field, Salisbury, second.

Among the exhibits not for competition Messrs. Keynes, Williams, and Co. had good groups of fine-foliaged plants and Lilies and a large collection of Dahlias and Roses, which made quite a show in themselves, and contained many examples of the highest order of merit, several promising seedlings being also shown. The same firm exhibited an exceedingly well made ballroom bouquet, which was much admired.

First-class certificates were awarded to Messrs. Keynes, Williams, and Co. for Cactus Dahlias "Panthea," light terra-cotta, and "Amphion," a very large showy terra-cotta coloured flower. A plant of Cattleya Dowiana carrying a good spike was exhibited by R. Blake, Esq., of Winterbourne, and was awarded a certificate of merit. Mr. B. R. Davis of the Yeovil Nurseries had a very fine assortment of Begonias, the most noteworthy among the doubles being Althcæflora, a bright rosy cerise flower very full. Ella L. Davis is also a very fine white, and I noticed another white not yet named. Mannette and Picotec are promising flowers of a new type. The single varieties exhibited were extremely bright in colour and of large size, the very best types only being selected for seed. A collection of cut herbaceous flowers and dwarf and profusely flowered double flowered seedling Petunias put up, also not for competition, by Mr. B. Ladhams, High Street, Shirley, Southampton, also attracted a good deal of attention from visitors.

ON reading a report in a local paper of the Wilts Show on the day after the Exhibition I was extremely sorry to learn that one of the exhibitors had assisted to judge in a class in which he was himself an exhibitor.

Although it is sometimes expedient to appoint exhibitors to assist in judging, yet I have never before known an instance of this kind, where the exhibitor felt himself so pure-minded, unselfish, and impartial as to be able to fairly judge his own productions in competition with others. The usual practice is for the judge in such a case to excuse himself to the other judges, gracefully retire, and allow them to award the prizes to the best of their ability without his assistance. I need scarcely say, had I known he was an exhibitor (and I feel sure I may also say the same of my other colleague), I should have declined to act, and so render myself liable to the censure, which we all apparently so richly deserved, and which we, no doubt, fully received from the other exhibitors, and those who knew the facts of the case. It is needless now to discuss the question whether, under other circumstances, the decisions would have been given differently; my chief object is to exonerate myself and my other colleague from blame, and I feel certain I may also venture to say the committee, who could not have even supposed that anyone would have been so foolish as to think such an act would be either overlooked or excused.—T. CHALLIS.

DEVON AND EXETER.

THE most successful Exhibition, from a financial point of view, this Society has had for many years was held at Northernhay Park, Exeter, the weather for once being very favourable. As a consequence the tents were crowded almost from the opening hour with a fashionable company, still greater crowds thronging the Exhibition grounds in the evening. The exhibits were not removed from the tents before 10 P.M. This, though very pleasing to the visitors, who were enabled to have a view of the plants, flowers, fruit, and vegetables with the aid of illuminations, was far from satisfactory to the exhibitors, most of whom were unprepared for this unexpected decision of the Committee. On the whole the competition was not so keen as usual, but in spite of this a very good show was arranged. Mr. G. D. Cann is the Honorary Secretary, and with him are associated a good working Committee.

In the plant classes Mr. G. Lock, gardener to W. B. Cleave, Esq., Crediton, was the most successful exhibitor, among the specimens shown by him being many that have been previously noticed in the reports of the shows held at Weston-super-Mare and Taunton. His Palms and Crotons were especially fine, and he had several well-flowered specimens of Ixoras, Ericas, Allamandas, and Bougainvilleas. Mr. Rowland, gardener to W. Brock, Esq., succeeded in winning the silver cup for nine flowering plants, among these being good sized well-flowered specimens of Allamanda Hendersoni, Ixora Williamsi, Stephanotis floribunda, Dipladenia amabilis, Bougainvillea glabra, Anthurium Andreanum, and Rondeletia speciosa. Mr. Lock was a good second, his plants, however, not being quite fresh enough. The best six flowering plants were staged by Mr. E. Mollon, gardener to Mrs. Pouget, the same exhibitor being also first for British Ferns. Classes were also provided for Orchids, Fuchsias, Gloxinias, Liliums, Begonias, Zonal Pelargoniums, Lycopodiums, and Ferns, in all of which the competition was fairly good. Groups arranged for effect, and occupying 100 square feet, are always a feature at the Exeter Shows, Messrs. Lock and Rowland being the most successful exhibitors. This year Mr. Lock was well first with a light, bright, and very pleasing arrangement, in which elegant Palms, well coloured Crotons, and various choice flowering plants were seen to good advantage springing out of a groundwork of Maidenhair Fern. Mr. Rowland, who took the second prize, also had a capital bank of plants, but these were not so tastefully and lightly arranged as were Mr. Lock's.

Cut flowers were numerous and good, the most successful exhibitors being Mr. J. Walter, Exeter, Mr. J. Nation, and Mr. Humphries, Chippenham, the two last named being the principal competitors with Dahlias. Master J. Lock repeated his success with a dinner table completely arranged for dessert with decorations of flowers and fruit, laid for ten persons. The principal feature in the decoration consisted of three central epergnes most tastefully filled with Grasses, foliage of Croton Chelsoni, Ferns, and choice flowers.

The competition with fruit was not so keen as usual. The best collection of ten dishes was staged by Mr. W. Iggulden, gardener to the Earl of Cork, Frome, who had a good Queen Pine, Black Hamburgh, and Muscat of Alexandria Grapes, Hero of Lockinge Melon, Sea Eagle Peaches, Lord Napier Nectarine, Florence Cherries, Figs, Plums, and Apricots, all in good condition. Mr. C. Bull, gardener to Sir Redvers Buller, Crediton, was first for six dishes, these consisting of good Black Hamburgh Grapes, High Cross Hybrid Melon, Elruge Nectarines, Bellegarde Peaches, Napoleon Bigarreau Cherries, and Denniston's Superb Plum. Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, was second. Mr. Bull gained a first prize for a fine well ripened Smooth Cayenne Pine Apple. Mr. Barnes, gardener to T. C. Daniels, Esq., was first for Muscat of Alexandria; Mr. Iggulden for Foster's Seedling; Mr. J. Langworthy, gardener to G. P. Bouverie, Esq., for Madresfield Court; and the Rev. H. Clark for Buckland Sweetwater, the exhibits being highly creditable in each instance. Mr. Crossman had the best Melon, winning with a good fruit of Hero of Lockinge. A fine highly coloured dish of Sea Eagle Peach, staged by Mr. Iggulden, was awarded first prize, and in the class for Nectarines Mr. Crossman was first with Pine Apple. Hardy fruit generally was well shown, and vegetables as usual were remarkably good. The best twelve dishes of the latter were staged by Mr. R. Mairs, gardener to Sir J. Shelley.

Messrs. Lucombe, Pince & Co., Exeter, contributed a grand lot of stove and greenhouse plants, as well as several good stands of Roses and other cut flowers. Messrs. R. Veitch & Son, Exeter, also arranged a very pretty group of choice flowering and fine-foliaged plants, including several good Orchids, while from Messrs. Kelway & Son, Langport, came capital samples of Gladioli, Gaillardias, and other flowers.

HELIOTROPES.—Insert cuttings of these plants in quantity for early spring flowering. Directly they are rooted place the young plants singly in 3-inch pots, and encourage them to make sturdy growth, so that dwarf bushy little plants are produced by the end of the year. The shoots must be pinched from time to time, and the plants grown as sturdily as possible.—W. N.



HARDY FRUIT GARDEN.

Strawberry Runners.—It is not always convenient or possible to form fresh beds in July or early in August, but unless this important work is carried out both timely and thoroughly it had far better be delayed till the following spring. This admits of the ground being well and deeply dug, plenty of manure being mixed with each spit, and if it is done early in the winter, or as soon as cleared of preceding crop, it will have settled down sufficiently for the Strawberries to be planted in April. In anticipation of this, the required number of rooted runners should now be taken from between the rows of old plants, these being bedded out in rows on a border or a good open piece of ground. They may be planted 4 inches asunder in rows 6 inches apart, and beyond being watered when first put out, and once or twice subsequently, and kept clear of runners and weeds, no further trouble need be taken with them till they are wanted next spring. Thus treated, they increase in size, form abundance of roots, and are transplanted readily with a trowel. Plantations formed in the spring ought not to be allowed to fruit the same season; but if the flowers are pinched out as fast as they form grand plants will be secured, which will bear heavily the following season. The ground need not be given up wholly to spring-planted Strawberries, and the spaces between the rows may be profitably utilised for Lettuces, Onions, and other quick-growing vegetables that do not attain a great size.

Treatment of Old Strawberry Beds.—There are yet a few cultivators who cling to the old practice of cutting away all the foliage from Strawberry plants soon after the crops are cleared off, this resulting in the formation of fresh foliage and crowns. It is not necessary or advisable to go to this extreme, but at the same time it is preferable to allowing the beds to remain for many weeks in a rough and much crowded state. Directly sufficient runners are obtained for planting or fruiting in pots, all plants that are to be reserved for fruiting next season ought to be trimmed round with the knife, this removing all runners as well as many old leaves. The next proceeding should be to well hoe the ground about the plants, after which all rubbish should be lightly cleared off and burnt. It is unwise to thoroughly clear the ground of all the mulching material with the rubbish, as the former should be left on as much as possible in order to prevent cracking, and also to keep the roots near the surface. The aim ought to be to encourage healthy vigorous growth, this laying the foundation of a good crop of fruit next season. It is very unwise to preserve old or exhausted beds, these rarely producing fruit either of good size or quality. Younger plants produce the earliest and best crops, and a bed ought to be formed every season, and an old one destroyed. At this late date it is not advisable to follow Strawberries with Broccoli, Savoys, or Borecole, though all these succeed surprisingly well when planted earlier on solid rich ground. The first opportunity should be taken of digging the ground deeply and roughly, the action of frosts, winds, and rain thoroughly pulverising it during the winter. Wonderfully heavy crops of Potatoes have been taken from ground thus treated.

Good Early Plums.—As a rule, Early Rivers or Rivers' Early Prolific is principally relied upon to produce the earliest fruit, and it is, though small, a heavy and almost sure bearer. Morocco, a much older variety, does not seem to have retained its hold upon public favour; but it is well worthy a place in every garden where a certain amount of wall space is given up to Plums. Planted in an east or south-east aspect, it rarely fails to ripen a good crop early in August, the fruit being near the size of the Orleans, dark purple in colour, and good alike for dessert or culinary purposes. Dry's Seedling, which was raised about twenty years ago, is as yet not much grown, but is a very profitable variety. It is of vigorous growth, and if not much pruned will bear freely in quite a young state, while well established trees rarely fail to produce heavy crops of very fine fruit, reddish purple in colour, and fit either for dessert or cooking purposes. It usually ripens early in August, but this season the first fruit were gathered in the third week of this month.

Forwarding Pears.—The finest of the early varieties are naturally much later than usual, but are fairly plentiful. As neither the Jargonelle nor any of the Williams' Bon Chrêtien type will keep many days or even many hours after they are fit to eat, the season should be lengthened as much as possible by artificial means. At the present time (August 20th) luscious fruits of Jargonelle are being sent to the table that were gathered about nine days previous, and while yet in a comparatively hard and green state. Placed in a box of quite sweet hay and set in a warm house or kitchen, the fruit being kept uniformly warm without being exposed to a drying atmosphere, soon ripen and do not shrivel. Only a few, and which appear to be the forwardest, should be gathered at short intervals, and thus treated till such time as those on the trees are fit for use. The Bon Chrêtien forms a fairly close succession to the Jargonelle, especially if treated as just advised. The old Windsor and the superior Beurré d'Amanlis may also be forwarded artificially; in fact, the practice is well worthy of being followed in all cases, always, however, providing the natural season is not unduly anticipated. When gathered long before the seeds commence to change colour, or much before the fruit stalks part freely from the trees, shrivelled, tough and flavourless fruit is the inevitable result. Nothing tainted or of an objectionable odour should come into contact with either ripening Pears or Apples, the latter being especially porous and absorbent, and therefore easily spoilt as regards flavour.

Early Apples.—These also may be forwarded as advised in the case of Pears, but as a rule are much more juicy and pleasantly flavoured when gathered direct from the trees, or when they drop off. Beauty of Bath, Irish Peach, and Quarrenden are all crisp, juicy, and sweet when gathered ripe from the trees, but after being stored a short time lose in quality most surprisingly.

FRUIT FORCING.

Figs.—*Unsatisfactory Cropping.*—Trees planted out not unfrequently grow rampantly, and consequently produce thin crops of fruit. In that case root-pruning may be resorted to, and the roots be confined to a border 3 to 4 feet in width. If the drainage be defective it will be necessary to lift the trees in the autumn as soon as the leaves commence falling and replant in fresh soil. Place 9 to 12 inches of rough stones or brickbats for drainage, and over it a covering of rough lime rubbish, using the finer parts for mixing with the compost in the proportion of one part to five of turfy loam, the latter preferably rather strong than light, and a twentieth of crushed steamed bones. In replanting, ram the soil well about the roots, for short-jointed fruitful wood cannot so well be secured by any other means as by a solidified compost. The border need not be more than 24 inches deep, due allowance being made for the compost subsiding. Should the drainage be good it will only be necessary to confine the roots to the narrow border, and removing some of the old soil from amongst them, replacing with fresh material, and top-dressing with the compost before named, but not covering the roots more than 2 or 3 inches deep.

Earliest Fig House.—The trees will now be ripening their wood, and watering may be discontinued, air being admitted liberally. If, however, the second crop is not yet ripened, moderate moisture in the soil will be necessary, with a rather free circulation of warm air to insure high quality in fruit. Trees in pots we prefer to place outside if the wood be ripe, but the season is so exceptional that the cultivator will require to exercise his judgment.

Cucumbers.—It is usual to make a sowing early in August for raising plants to place out early in September to yield a supply of fruits by December and onwards through the winter. We prefer to rely on the autumn fruiters for a supply up to or over Christmas, when plants from a sowing made at the beginning of September will be in good bearing, and continue the supply through the winter and spring months. There is no better variety for fruiting all through the year than a true stock of Telegraph. We, however, have about an equal number of plants to Telegraph of Cardiff Castle, which last, in some plants, give fruits quite as long as Telegraph. We apprehend the pollen of Telegraph had by some means been conveyed to the pistillate flowers of Cardiff Castle; anyway we have on plants from Cardiff Castle seed with fruits surpassing Telegraph in size and freedom of production. The plants showing this freak are from last January sowing still in bearing, whilst those for autumn fruiting (the seed being out of the same fruit) are in every respect the characteristic Cardiff Castle.

Push forward the work of clearing out the house intended for the plants the seed of which is about to be sown. Attend to any repairs that may be necessary, paint or thoroughly cleanse the woodwork with soap and water, limewash the walls, adding a little flowers of sulphur, and clear out the old soil and spent manure. If fermenting materials are employed for bottom heat they must now be prepared; stable litter, and Oak or Beech leaves in about equal proportions thrown together, moistened and turned over two or three times answer very well. Tan is a good material, as it retains heat a considerable time. Hot-water pipes in addition to the fermenting materials will be necessary in the bed to maintain the required bottom heat after that of the fermenting materials is spent.

Assist the autumn-fruiting plants to make strong growth, remove all the staminate flowers and tendrils as they appear, being careful neither to overcrop nor overcrowd the plants. Less moisture will now be necessary unless the weather is very bright, but lightly syringe the plants at closing time, not later than 3 P.M., and sprinkle the walls, &c., at 7 to 8 A.M. The night temperature should be maintained at 65°, 70°, to 75° by day artificially, 80° to 85° or 90° from sun heat, ventilating moderately in the early part of the day so as to insure thoroughly solidified growth, and close sufficiently early to run up to 90° or more.

In pits and frames linings of sweetened fermenting materials will be necessary to maintain the plants in a free-bearing state; keep the foliage rather thin, and stop the growths one joint beyond the fruit. Sprinkling the plants should be discontinued, except on sunny afternoons. Admit air early in the day, and close early in the afternoon. With linings and the protection of mats over the lights Cucumbers will be produced for a lengthened period.

Peaches and Nectarines. — *Succession Houses.* — Those that ripened the fruit in July will have the buds plumped and the wood sufficiently ripened for the removal of the lights. The removal of the roof lights will tend to the preservation of the foliage and counteract the tendency to over-maturity of the buds or their premature development, by affording the trees the benefit of rains and of night dews, the borders getting thoroughly soaked right through to the drainage by the

autumn rains, which we have invariably found to have an invigorating effect on the trees. Trees that ripened their fruit in August should, as soon as the fruit is cleared, have the wood that has carried fruit not being extensions removed, and any wood not required for next year's bearing, or for the extension of the trees or replacing weakly and exhausted parts, also cut away. This will admit of the freer access of light and air, and of the cleansing of the foliage by water, or insecticide if necessary, it being important that the foliage be continued in a healthy state to as late a period as practicable for the perfecting of the buds and the maturity of the wood. Air should be admitted to the fullest possible extent. If, however, any trees are not ripening well, keep the house rather close by day and throw it open at night, which will tend to check the tendency to late growth and induce maturity both of the buds and wood. There must not be any lack of moisture at the roots, giving a good watering if necessary, or trees that are weakly will be assisted in plumping the buds with liquid manure, not, however, in too powerful doses. Trees ripening their fruit will need to have water withheld from it, and besides affording a due supply at the roots moisture must not be entirely withheld from the atmosphere ; an occasional damping of available surfaces, especially on fine days, will be necessary for the maintenance of the foliage in health. If the weather be cold and wet a gentle warmth in the pipes, especially by day, so as to admit of a circulation of air, will be necessary for the satisfactory ripening of the fruit. A temperature of 60° to 65° at night will be sufficient, and 70° to 75° by day artificially in order to a steady progress of the fruit in ripening, air being afforded more or less constantly. If the fruit ripens too rapidly, as may be the case if the weather prove very bright, a shading over the roof lights of a single thickness of pilchard net, or a double one of herring net, will break the fierce rays of the sun, and not only retard the ripening but insure the fruit finishing more satisfactorily than when exposed to the direct rays of the sun.

Latest Houses.—The fruit is very backward. Artificial heat will be necessary, affording a night temperature of 60° to 65° and 70° to 75° by day, and 80° to 85° or 90° from sun heat. Admit air freely, increasing it with the advancing temperature from 75°, keeping through the day from sun heat at 80° to 85°, and closing sufficiently early to continue the temperature at a good heat until late in the afternoon, when a little air should be admitted to allow the pent-up moisture to escape, and no more heat need be in the hot water than necessary to prevent the temperature falling below 60° to 65°. Watering at the roots must only be moderate, though sufficient to maintain the foliage in a healthy state. The growth is unusually vigorous, and gross wood is likely to be made until a late period. Syringe only to keep the foliage clean, and always so as to have the trees dry, or nearly so, before night. Damping at closing time will in most cases be sufficient, and will permit evaporation to continue, insuring the elaboration and assimilation of the sap, and the increased solidification of the wood. Laterals must be stopped, as that is preferable to removing many shoots, which is prolific of gumming, causing other and soft growths to be made.

Unheated Houses.—Keep the inside borders duly watered, but avoid anything like a superabundance of either water or liquid manure, and syringe no more than is necessary to keep the foliage clean. Cut out any gross growths so as to equalise the flow of the sap, having the growths sufficiently thin to admit the full action of light and air. Keep the fruit exposed with its apex to the light. Leave a little air on at night, and by moderate and judicious early opening and early closing of the ventilators secure to the trees as much of the solar heat as is safe, 80° to 85° not being too much.

PLANT HOUSES.

Greenhouse Rhododendrons.—Considerable care is needed to prevent those that have completed their growth starting again. They are much more liable to do this than either Azaleas or Camellias. Harden them thoroughly by free ventilation, and then stand them outside on a moist base in a position where they can be lifted inside if damp wet weather ensues. Although they enjoy abundance of water at their roots they cannot endure being saturated either from the water pot or by heavy rains.

Lapagerias.—Some are beginning to flower ; fumigate them with tobacco smoke if aphides exist upon them, or they will soon become established on the flowers and spoil their colour. Water freely and give stimulants in a weak state every other time they need water. Still continue to shade them from the sun, for full exposure will seriously brown and injure their foliage. Light is necessary to harden and ripen their wood if they are to flower profusely, but to accomplish this it is not necessary to subject the plants to the burning rays of the sun.

Fancy Pelargoniums.—Those cut back some time ago will now have broken well into growth. They should have the whole of the soil shaken from the roots, and repotted in fresh, using smaller pots. Keep them close for ten days or a fortnight in cold frames until root action has commenced. Those that are just breaking may be pushed forward by placing them in frames until they are ready for repotting. These plants should be potted moderately firm in a compost of good loam, one-seventh of decayed manure, and a liberal quantity of sand.

Zonal Pelargoniums.—The past wet weather has caused those outside to grow too soft to insure their flowering well unless bright weather follows for the next month or six weeks. Do not administer stimulants, but keep them on the dry side to harden and ripen them as much as possible. Those intended for flowering in October would be better under glass where they can be protected from heavy rains and dews that are so prevalent in some localities. Insert good quantities of cuttings of both single and double varieties for flowering early in the year ; in fact, the latter that are required to supply good trusses for cutting during April, May and June should be rooted at once. Insert these singly in 3-inch pots, and stand them outside until they are rooted if fine weather continues, if not protect them in frames.

Cyclamens.—If the whole of these have not been placed in their largest pots it should be done without delay. Those twelve months old may be placed into 7-inch, while suitable sizes for the remainder will be 5 and 6-inch pots, according to their size. Where the plants have been grown without shade they will have dwarf sturdy foliage, and every attention must be paid to insure their retaining this character until they cease flowering. Plants that are drawn up weakly do not possess half the beauty they are capable of displaying where the foliage is stout and the flower stems need no support. Cyclamens certainly enjoy light shade, but the difficulty is to apply the exact quantity they require without proving injurious to the plants by causing their foliage to grow weakly and too tall to display the handsome character of these plants. It is next to impossible to apply shade without having the plants in this unsatisfactory condition, therefore it is advisable to grow them through their various stages without it. By this method of culture more attention is needed, for the plants must stand upon some moisture-holding material, and need constant watching during bright weather. When grown without shade, with liberal ventilation and bright sun, moisture is evaporated to such an extent that the foliage soon falls over the rims of the pots. This must be prevented as far as possible by syringing the plants liberally, and damping the stages, &c. Avoid saturating the atmosphere during dull, sunless weather, or the foliage may become blotched and the lower leaves decay. Sow seed for next year's plants.

Petunias.—These may also be rooted and grown for the same purpose. They will thrive well with the treatment given to Heliotropes until the close of the growing season, when they can be kept cooler from the middle of November. Marguerites and Fuchsias may also be rooted in quantity, so that they will be ready for 5-inch pots early in the year.

Hydrangeas.—Young plants produced from the heads of those that failed to flower will now have formed bold plump buds that will be certain to flower early in the year. These may either be transferred now into 5-inch pots or during the winter ; if more convenient they can be left until they start into growth. With those that have completed their growth thus early, potting at the present time is advisable. Larger heads will be produced than will be the case if potting is delayed. Place them deeply into the pots so that their buds are only just above the surface of the soil, and stand them in a sunny position outside. Later struck plants need not be potted until the winter. Cuttings may still be rooted from outside plants that are growing in an open sunny position.

Schizanthus.—Sow a little seed in a pan, and place it in a cold frame until the seed has germinated. Grow the plants cool to keep them dwarf, and when large enough place them singly into 3-inch pots.

Richardias.—Plants that rested early and were afterwards planted out will now be pushing with great vigour. These may be lifted, and placed in 6 to 10-inch pots, according to their size. The plants can be lifted with large balls of soil, but this is not necessary so long as all the fibry roots are carefully preserved. Pot them in good loam, one-third of manure, and then stand them in a shady place until they are established in their pots. They must have plenty of water and be liberally syringed—in fact, the foliage should not be allowed to become dry until they are established. By this treatment the plants can be housed, and will commence pushing up their spathes by the time it is necessary to lift the general stock.

THE BEE-KEEPER.

CONDITION OF BEES, AND AT THE HEATHER.

As is my usual custom, a week or more before taking my bees to the Heather I dismantled all, then dressed them as they do at the Heather. There is a twofold advantage in this. It gives us the exact quantity of coverings required, and accustoms the bees to the ultimate appearance of their hives, so that when at the moors they do not lose themselves by entering the wrong hive, as they are sure to do when site and covering are suddenly changed.

My first work after uncovering them was to examine and remove all supers, taking away every piece of fully extended and partly filled comb, which is contrary to the management of some bee-keepers, but I work entirely for quality, and the strength of my

hives gives quantity. After my supers or sections are in place, a board is screwed on the top of the case, which secures, and at the same time ventilates the bees, the mouth-piece is closed and the shutter drawn beneath. The latter is done a day or two previous to removing, as it accustoms the bees to the airway, preventing them on the journey from rushing to the floor and succumbing through attempting to get out, as is commonly the case when not opened until starting.

When secured in this manner all that is necessary to do at starting is to close the doorway, bundle up the coverings, then load upon a lorry and take to the station, where a truck is in waiting for them. The truck holds upwards of fifty of these tidy hives, and the cost of taking them fifty miles by rail is about 6d. each, and the conveyance at the other end half of that, to a distance from the station of about half a mile, when in a short time the bees are at work, and this year, by the precautions used, I only observed one lost bee.

The wild Thyme was abundant, and its fragrance was welcomed a long distance. The weather improved on the same day the bees were removed, and the following one was the best honey gathering day of the whole season, the bees falling heavily before they could reach the alighting board. A piece of felt tacked to it allows many falling short to creep to the hive in safety. With a continuation of the improved weather we have enjoyed for some days since the 8th there will still be an abundant harvest of honey. On the evening of the 12th and throughout the 13th a heavy rain fell, accompanied with a bitter high wind. During the month of July the ice was a quarter of an inch thick, and the Potatoes are completely destroyed. An earthquake was heard, and felt too, and not a humble bee is to be seen.

It is not so very long since a correspondent twitted us that they, the B.B.K.A., would cross the border to teach us bee-keeping, but like the one who said he "showed the Scotch the mysteries of the bee hive," after killing most of the bees of a number of hives it has been a failure. It is quite pleasing to me to see them crossing the border to get more wrinkles, and to fraternise with us and our bees on Scottish heath. Not only are bee-keepers coming north, but many Londoners are taking advantage of recruiting their health on and around the moors of Leadhills, where I saw a quantity of the coveted auriferous metal, and where I hope the bees will gather much of the amber nectar to their masters.

I wonder what the lecturer I heard at a late show would have thought of the stinging propensities of bees had he experienced mine after being set down at the Heather. Although I was treating them kindly and with great courage they were furious, which did not astonish me so much as the same lecturer did when preaching the docility of bees while the manipulator was in full retreat! The numerous crosses have much to answer for in this respect, and perfect docility will never be attained unless some means are taken to have none but true Carniolians. But what is the reason that some of my Carniolians are vicious this year, and that with others they are proving themselves an eccentric race? Simply because they are not pure. Certain dealers in Englaud have been sending out queens said to be Benton's, but who never received a queen from that gentleman. It is to be hoped that this will be stopped by bee-keepers taking the hint, and buying their amiable working bees from a reliable dealer. I know whereof I speak in this matter, having experienced much disappointment by having spurious queens in my possession. I saw the progeny of a queen working on the Heather that was sent me from Austria only some five weeks ago, and its general appearance is very different from the progeny of those I had from vendors in England. The state of my hives before removing them to the Heather presents some singular results. Octagons, two supers filled with comb, 16 lbs. Surplus crossed Syrians, the most a surplus of 10 lbs. from a prime swarm. Crossed Cyprians very heavy, but not in supers; have not been fed for eleven years, and was never touched since October till August. No swarms from them this year.

Carniolians swarmed, but were not excessive. Early swarms were in good order, but those after the longest day have dwindled down to a mere handful. All breeds the same, a striking example of the contracting and stimulating process. Owing to the untoward weather, just what we have warned bee-keepers so long against, this year has given us proof positive and fully demonstrated the absurdity of advising bees to be kept in small 10-standard frames, and the greater folly of reducing them to 6 or so on the beginning of the honey harvest, as if we knew when it will commence; but bee-keepers are gradually losing faith in their would-be teachers, and grapple with facts coming under their own observation. My pure Syrians have made no progress since the early spring, always strong, but always losing, and, owing to the weather, unable to gather surplus, but how they work at the Heather is something grand and requires to be witnessed to be fully appreciated. We wish for a continuance of this weather, which will make the whilom light hives with their teeming multitudes great weights, and which will be duly recorded by—A Lanarkshire Bee-keeper.

APICULTURAL NOTES.

CHANGING QUEENS IN THE AUTUMN.

"Felix," in his excellent article advising the removal of the old queen and substituting a young one in her place, omitted saying how it was to be done with the least risk or trouble. May I be allowed to point out that the Hallamshire law enables this to be done with the least trouble and no risk whatever? All one has to do is to see that there is no brood or eggs when he removes the old queen; if there is, then he must put the combs containing it into another hive forty-eight hours afterwards, or any time before next May for what it matters. The young queen can be dropped in at any time of the day or night, and no more notice need be taken of her. In most apiaries there will be some stocks headed with young queens it is not intended to remove; if so, the brood or eggs found can be given to them. The young queens can safely be kept a week or more in a Benton mailing cage in a drawer or cupboard ready.

This law is making headway across the Atlantic, where "time savers" and "risk preventors" are in demand. The editor of the *Canadian Bee Journal* seemed struck with Simmins's system as a "time saver," removing the old queen in the afternoon and dropping the fresh queen in the same night, and talked of giving it a trial. This system, which is Mr. Pond's re-dressed, has been thoroughly tested both by T. Bonner Chambers, Esq., F.L.S., and myself, with the result already published—viz., the fresh queen is unmolested until the seventh day at least. She never begins laying before the eleventh, even if in full lay when introduced; that 40 per cent. are missing before the twentieth day; and that very often, if not always, a daughter of hers takes her place before the twenty-eighth day. If anyone doubts this, let him mark or clip the wing of the queen introduced, and I will guarantee he does not find one-third reigning four weeks after, though all will be found safe (?) on the seventh day. Last autumn I drove the bees from three skeps—two for one man and one for another; captured the old black queens, and about midnight I dropped in from the top of each a young Cyprian queen, daughters of imported mothers, but cross-mated. Hybrid Cyprians duly appeared in each stock, and being a long distance away from my apiary there was no suspicion of there being stray young bees. When spring came one was queenless, and the other two were headed with hybrid drone-laying Cyprian queens. The queenless one was given a Cyprian queen in accordance with the Hallamshire law about the end of May, and the black bees were still very numerous in the middle of July.

In one of my letters I mentioned about a young queen hatching out in my hand—a daughter of the queen introduced, the old queen being safe. Well, this queen has been in the hive ever since till yesterday, and she has shown no faulty signs. These are cases I am sure about. In the case of the three skeps young queens were reared which killed their heavy egg-laying mothers; then, there being no drones about, two failed to mate and the third was lost. In the *British Bee Journal* for July 12th an Irishman is quite jubilant over his success in introducing a queen *à la* Simmins he obtained of Messrs. Neighbour. On the third day after dropping her in he found and cut out two sealed queen cells; on the eleventh day he found some eggs, but no brood, and neither did he succeed in finding the queen. The eggs might have been deposited by laying workers, though more probably by the queen, as everything is just my experience—first queen cells, second no eggs before the eleventh day. The editor does not point out that it was more of a failure than a success; had she been introduced by the Hallamshire law there would have been a lot of sealed brood by that time.

THE GLASS SECTION INVENTION.

"Felix" seems to be giving me a piece of his humour over this. Allow me to inform h'm I know quite well what the Patent Office can give; my name is enrolled amongst those who seek its protection more

than once ; but there is something the Patent Office does not protect, and while people try to rob inventors of their dues the grievance will continue. "Felix" has drawn a wrong conclusion from my article, and I shall revert to the subject again.

THE HEATHER SEASON.

This will be very late this year. We have failed this year in every other source of honey, and unless there is some fine weather during the Heather bloom there will be no harvest, as the corn is only in flower here, and it could not possibly ripen ; also in the natural order of things all bees would be exterminated, as they have not food enough to last till Christmas. In 1879 we had a very cold wet summer, and the Heather did not open till August 26th ; yet we have not had a Heather season to equal it since. Four weeks of hot fine weather would mean the best Heather harvest on record. Move your bees, place them a mile from the moors in some sheltered place, as I pointed out last year, then, should the weather prove bad, the stocks will keep strong. As a matter of fact, it would pay to move bees to the Heather from every part of the country, even if only to save feeding, provided they were in hives that could be fastened in a practicable manner for the journey. When the Royal Agricultural Society takes the bee department in their own hands perhaps they will provide a class for hives that will render migratory bee-keeping possible and practicable to all. Some for one thing, and most for another, we shall all remember the past season. I have had to feed all my bees all summer except one stock - these are Punic bees I have previously spoken so highly of; they have kept up their population, including drones, all summer, and if left to Nature, on the laws of the survival of the fittest, they would be the only bees remaining. Of course the season has not been a fair one to test any race, but this has always stood out very prominently.

"Felix" I see refers to the price of honey, and considers the sections should fetch 1s. 3d. each. If I may be allowed to express my opinion plainly, I should think the man who accepts less than 2s. 6d. each wholesale very unwise. The honey crop nearly all over America is as much a failure as here, and it was a failure last year. There is no country on the Continent where sections are largely adopted. The only other places are New Zealand and several colonies in Australia, but no more were used there last season than they will require themselves, and next season's crop could not be landed here before May, so why not demand 5s. each? If you get it, it will help to keep your spirits up in feeding for next season. I am working all my sections in glass, and not one will I sell under 5s., even if the Heather crop yields 200 lbs. per hive.—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Little & Ballantyne, Carlisle.—*Bulb List, 1888.*

Dickson's (Limited), Chester.—*Dutch and other Bulbous Roots, 1888.*

Hogg & Wood, Coldstream and Duns.—*Catalogue of Bulbs.*

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Catalogue of Hyacinths and other Bulbs.*

E. P. Dickson & Sons, Hull.—*Catalogue of Bulbous and other Flower Roots. Lists of Carnations and Strawberries.*

Webb & Sons, Wordsley, Stourbridge.—*Bulb Catalogue, 1888.*

Fisher, Son, & Sibray, 4, Market Street, Sheffield.—*Catalogue of Bulbs and Flower Roots.*

J. Carter & Co., High Holborn, London.—*Bulb Catalogue for 1888.*

TO CORRESPONDENTS

All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*H. Williams*).—Mr. William Sunley, Bacchus Hall, Moor Allerton, Leeds, was, and we think still is, the address of the Secretary of the Gardeners' Benefit Society to which you refer. It is a very good and well managed institution.

Hardy Herbaceous Plants (*H. S.*).—You can obtain plants of the less common from any of the florists who advertise in this Journal. Write to them for a catalogue, and you can select for yourself.

Striped Single Dahlia (*A. I.*).—We have seen similar varieties, but yours seems to be especially rich in colour. By all means preserve it, as it will be useful and effective.

Worms in Lawn (*A. S., Glasgow*).—The old remedy that has been hundreds of times mentioned of saturating the lawn with clear lime water is safe and effectual.

Asphalte Walks (*G. D.*).—Asphalte walks do not injure trees or plants growing in the adjoining borders, nor do they injure the grass of a lawn which they bound ; nor would they injure Box edging unless the tar was allowed to run among it, which might be easily prevented by a board placed before it while the asphalte was being laid down.

Exhibition Roses (*Curious*).—As you appear to take special interest in the tabulated lists of Roses as prepared by Mr. E. Mawley, the "curious" point to us is that you appear to have missed entirely the very complete list published in September, 1887. Another list will probably appear during the autumn.

Exhibiting Plants (*J. S. M.*).—The plants named in the list are eligible for the prize according to the stipulations of the schedule, because there are not more than two of one genus in the collection. It is a curiously worded class, as two of the same species could be staged; thus the prize could be won by three pairs of plants—for instance, two of Odontoglossum vexillarium, two of Oncidium macranthum, and two of Anthurium Schertzerianum.

Specks on Potatoes (*Inquirer*).—The white specks on the skin of the Potato are common to some varieties, especially the rough-skinned, which are distinguished for high table quality. The specks are the rudimentary form of scab, due to the growth of a fungus (Tubercinia scabies) the spores of which are grouped in a globe around an air space. With the development of the fungus the spores are set free by the bursting of the skin of the Potato. There is nothing to cause anxiety in the present appearance of the Potato, as there is no evidence of disease, and the scab will not become serious unless the weather should prove unusually wet, or the Potatoes are stored in a wet dirty state.

Melon Pit (*A. C. McI.*).—You will find some plans on another page, as will "A Seeker for Information" on the same subject. We are obliged by your notification, and you are very welcome to what you have received. Several persons have become subscribers through seeing copies of the Journal sent or lent to them by friends. We are greatly obliged by such friendly co-operation, but it is not our wish that anyone should lose by the lending, and we willingly supply numbers, if applied to early, in the place of any that are disposed of in that way. We, like yourself, value the work of the correspondents to whom you refer very highly, and trust you will long derive pleasure and profit from their writings.

Annuals for Spring (*J. W.*).—A list of annuals suitable for sowing in the autumn for flowering in spring was published on page 108, the issue of the 2nd instant; but Nemophilas appear to be omitted. They often pass the winter well outdoors in suitable positions and thinned early. Well grown in pots they are very attractive. The same remarks apply to Saponaria calabrica. Whitlavias and Candytufts do not always pass the winter safely without a little protection. Some of all the kinds potted and plunged in ashes near the glass of a light cold frame keep well. Schizanthuses raised at once and wintered on a shelf in a light greenhouse are beautiful in the spring when well grown. Ten-week Stocks also answer, and there is just time for sowing the London Intermediate for flowering in May, though the plants ought to be an inch high now. So ought Schizanthuses.

Rose—Primulas—Grapes (*Kirkcudbrightshire Reader*).—You must not prune the Rose or it will push fresh growths at the wrong time. Less water may be given than hitherto, but not keeping the roots so dry as to cause the leaves to flag seriously. If in good health it will flower well next year. It cannot have too much sun and air. Your Primulas have either been raised too soon, or received a check of some kind. All you can do is to pick off the buds, keep the plants cool, and give water judiciously. We know of no quick and easy method of removing mealy bug from bunches of Grapes. You erred in allowing the insects to get in, and will have no easy task in cleansing the Vines and house. If you can maintain a temperature of 65° at night, with air, the Gros Colman will ripen, but the Vine was not started soon enough.

Ants in Meadow Land (*G. F.*).—It is difficult to exterminate the ants without serious injury to the grass. The ground we presume is disfigured by hillocks. Those should be taken down level with the surrounding surface, and distributed evenly over the ground. A dressing may then be given of gas lime at the rate of 3 tons per acre, it being mixed with fifteen cartloads of compost—*i.e.*, ditch cleanings, road sidings, or similar material, so as to insure its equal distribution, care being taken that the heap is not placed over the roots of trees, which would be seriously injured if not destroyed by the gas lime. It may be applied either in the autumn, or as soon after the middle of February as practicable. Allow it to lie a few weeks, and when in working order work it well with chain harrows. The gas lime may make the grass brown, but it will soon recover, and the ants will be driven away if not destroyed. The most effectual remedy of a manurial nature is perhaps the ammoniacal liquor from the gas works. We use it diluted with six times the quantity of house sewage, which includes all house and laundry drainage, distributing it with a liquid manure cart, one dressing

in early spring giving a luxuriant growth of grass and freedom from ant hills, with which the land was much infested.

Making a Fig Border (*Subscriber*).—A border of 3 to 4½ feet is ample for Figs that are to cover an ordinary width of trellis. It is necessary that it be well drained, a 4-inch drain being laid with proper fall and outlet to carry off superfluous water. Nine to twelve inches depth of drainage should be used, preferably chalk or brick and mortar rubbish, roughest at the bottom and finest at the top. The border should be not less than 18 inches, and need not exceed 24 inches in depth. Good loam should form the staple of the compost, using the top few inches of ameliorated soil, and if possible with the turf. If of a calcareous nature so much the better, and if inclined to be heavy rather than light all the better. If light, add clay marl to the extent of a fourth; if very heavy add a fourth to a sixth of road scrapings. An addition of a sixth of old mortar rubbish freed of pieces of wood may be added whatever the nature of the soil may be, and a twentieth of steamed or crushed bones, the whole well incorporated, and the border made with the material moderately dry, so as to admit of its being well firmed. An allowance should be made of a few inches increased depth for setting. A 2½ feet width of border will be sufficient for the first two or three years. The cause of the fruit falling is usually due to immature wood—the want of sturdy, thoroughly solidified wood, stored with elaborated sap. It sometimes arises from over-luxuriance, which is fatal to successful fructification, and not infrequently to a check consequent on excessive evaporation and inadequate supplies of water or food.

Odontoglossum vexillarium—Quassia Water (*Reader*).—During the summer months this species will do fairly well with cool kinds such as O. Alexandræ, O. Pescatorei, and others. But from the beginning of October until May O. vexillarium should not be in a lower temperature than 55° to 60° at night according to the weather, whether mild or the reverse; the day temperature may rise 10° higher. In this temperature it will grow strongly, and is benefited by the cooler temperature of the cool Odontoglossum house from the time its growth is completed until October. The greatest success is attained by aiming at an intermediate temperature the whole year round. That suitable for Cattleyas is too warm for the species in question, and if grown with them it is very liable to be attacked with yellow thrip. A temperature between that maintained in the Cattleya and the Odontoglossum house with plenty of moisture is what is really required. This plant should be well elevated above the rim of the pot and the pots abundantly drained. The material for potting may consist of the fibry portion of good peat and sphagnum moss in equal quantities, with lumps of charcoal freely intermixed. On the surface there should be a thick layer of living sphagnum moss, which should be encouraged to grow. If the moss is kept growing the plant roots freely and abundantly near the surface. If you place a quarter of a pound of quassia chips in a gallon of cold water and boil for about twenty minutes, then when cool add another gallon of water, or even more, the solution will destroy green fly on Roses. It may be used stronger if necessary.

Culture of Alocasia metallica (*L. M. S.*).—The following note, contributed some time since by an experienced cultivator, will meet your requirements:—Very turfy peat and loam, broken up with the hand and mixed in equal proportions, with the addition of about a sixth part of the whole of well-rotted leaf mould, and a sprinkling of silver sand and charcoal broken up fine, is a compost that suits this Alocasia well. Supposing that you have a healthy young plant well established in a 6-inch pot and in need of a shift, it may safely be transferred into a 9-inch pot. The drainage should be carefully secured, and the crocks thinly covered with a layer of the most fibry part of the soil. The operation of shifting need not have anything peculiar about it different from any other free-growing plant. In placing the fresh soil round the ball be careful to preserve the strong fleshy roots, and keep the bulbous-looking base of the plant rather high than otherwise. It requires a high stove temperature to grow it freely, and a moist atmosphere is indispensable to a healthy development of the foliage. It should be placed near the glass, and carefully shaded from the direct rays of the sun for the greater part of the day from the 1st of April till the middle of October. To grow it with all the compactness and strength which it is capable of acquiring it should have plenty of room, and be kept quite close to the glass. When crowded among other plants, and far from the glass, it becomes drawn, and loses that massive and imposing appearance peculiar to it when well grown. With a high temperature—say 75° at night—and potted in open well-drained soil, it delights in a good supply of water, and under these conditions will in one season form a large handsome plant—an object well worthy of any extra care and trouble which may be bestowed upon it.

Rainfall Figures (*Ignorant*).—You say yourself and "many others who are not so well educated as more fortunate brethren" do not understand the figures which represent the quantity of rain recorded, and you cite the figures in the report from Derbyshire on page 168—namely, 7·95 inches, 10·10 inches, and 5·39 inches. It is not a question of great erudition, and several persons whom you describe as "fortunate" have simply gained knowledge by reading carefully, remembering what they read, and by asking questions and not forgetting the replies. You are evidently not so apt as some of your brethren in educating yourself, or you would not spell puzzled with one z, nor render the word figures thus—"figers." You must have seen those words in print hundreds of times, yet not once in the way you spell them. Thus a lack of knowledge may be attributable to oversight or lack of observation. Rainfall figures have been explained before, but we readily explain them again. In the majority of cases, as in the instance cited, an inch is divided into a hundred decimal parts. Fifty is half of a hundred, therefore 1½ inch of rain would be entered as 1·50. If the fall was a quarter of an inch it would be entered 0·25. If 1¾ inch 1·75. We think you will comprehend so far; but may possibly want to know why the "plain old way" of setting down quarter, half, or three-quarter inch is departed from. The answer is very simple. Because the rain does not always stop at those measurements; indeed, very seldom, and account has to be taken of the quantity between, hence the practice that we hope will "puzle" you no longer after you have set down the figures in the following manner and added them together.

	7·95
Thus you see they give a total of 23·44 inches, or 0·6 (six	10·10
parts out of a hundred) less than 23½ inches. If you wish to	5·39
know more write again. We have any amount of patience in	———
endeavouring to aid gardeners in understanding what they	23·44
read.	

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Taffee*).—1, Lilium speciosum; 2, Achillea Ptarmica flore pleno; 3, Insufficient without flowers; 4, Spiræa Ulmaria. (*B. B., Kenley*).—Hieracium aurantiacum. (*A. W.*).—1, Cichorium Intybus; the Begonia leaves were not recognisable. (*R. O.*).—1, Calluna vulgaris, the common Ling; 2, Erica cinerea; 3, Erica tetralix. (*E. M.*).—Campanula fragilis alba, very attractive and worthy of cultivation. (*R. D.*).—1, Origanum vulgare (Marjoram); 2, Ruta officinalis (Rue); 3, Amberboa moschata; 4, Linaria purpurea; 5, Godetia rubicunda. We hope if you send again you will attach the numbers, so that they can be seen without untying the ligatures.

COVENT GARDEN MARKET.—AUGUST 29TH.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	0	to	4	6	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	0	0		0	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	0	0		0	0	Peaches, dozen	2	0		10	0
Currants (Red), ½ sieve	2	6		3	0	Pears, dozen	0	9		1	6
,, (Black), ½ sieve	4	0		5	0	Plums, ½-sieve	3	0		5	0
Grapes, per lb.	1	0		2	6	St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	7
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	2	0		3	0	Mignonette, 12 bunches	1	0		3	0
Asters, dozen bunches	2	0		4	0	Pansies, 12 bchs	1	0		3	0
,, French, per bunch	1	0		1	6	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	0	0		0	0	,, scarlet, 12 trusses	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pinks, various, 12 bunches	2	0		6	0
Calceolaria, 12 bunches	4	0		6	0	Polyanthus, 12 bunches	0	0		0	0
Camellias, 12 blooms	0	0		0	0	Pyrethrum, doz. bunches	2	0		4	0
Carnations, 12 blooms	0	6		1	0	Roses, Red, 12 blooms	0	6		1	0
,, 12 bunches	4	0		6	0	,, (outdoor), 12 bchs	2	0		6	0
Cornflower, 12 bunches	1	6		3	0	,, (indoor), dozen	0	6		1	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	0		2	0
Encharis, dozen	2	0		4	0	,, yellow	2	0		4	0
Gardenias, 12 blooms	1	6		4	0	,, (Moss), 12 bunches	0	0		0	0
Lapageria, 12 blooms	1	0		2	6	Stephanotis, 12 sprays	1	6		3	0
Lavender, 12 bunches	3	0		4	0	Stocks, 12 bunches	4	0		6	0
Lilium candidum, per bunch	0	0		0	0	Sweet Peas, dozen	2	0		4	0
,, 12 blooms	0	0		0	0	Sweet Sultan, 12 bunches	2	0		4	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tropæolum, 12 bunches	1	0		2	0
						Tuberoses, 12 blooms	0	6		1	0
						Gladiolus, 12 sprays	0	6		1	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen pots	3	0	to	6	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	0	0		0	0
Asters, 12 pots	3	0		6	0	Heliotrope, dozen pots	3	0		6	0
Balsams, per dozen	3	0		6	0	Ivy Geranium	3	0		6	0
Calceolaria, per dozen	4	0		5	0	Hydrangea, dozen	6	0		12	0
Chrysanthemum, doz. box	4	0		9	0	Lilies Valley, dozen	0	0		0	0
Coleus, dozen	2	0		4	0	Lilium, various, doz. pots	12	0		21	0
Crassula, dozen	8	0		12	0	Marguerite Daisy, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Mignonette, per dozen	4	0		6	0
,, viridis, dozen	12	0		24	0	Musk, dozen pots	0	0		0	0
Euonymus, in var., dozen	6	0		18	0	Myrtles, dozen	6	0		12	0
Evergreens, in var., dozen	6	0		24	0	Nasturtiums, per dozen	3	0		6	0
Ferns, in variety, dozen	4	0		18	0	Palms, in var., each	2	6		21	0
Ficus elastica, each	1	6		7	0	Pelargoniums, dozen	4	0		9	0
Foliage Plants, var., each	2	0		10	0	,, scarlet, doz.	3	0		6	0



NOTES BY THE WAY.

From the self-binder reaper to the old reaping hook there is a long interval of gradual improvement in the manner of cutting corn reaping, and it may be thought we have reached as near perfection as possible in the self-binders now to the fore. But have we? In order to give a correct answer it will not suffice to point to the excellent work done last season when crops were slight and the barometer stood at set fair all through the harvest, but we must see what is being done under the adverse conditions of broken weather, a heavy crop of straw, and much laid corn. In a recent journey through five counties, in all of which harvest work was going on, we did not see a single self-binder at work. The ordinary reaping machine, scythes, and in two instances reaping hooks, were in full swing, to the entire exclusion of self-binders. Of course there are fields of corn erect and clean enough for the self-binder, but so much corn is not in this satisfactory condition, that the more simple implements are used of necessity. No doubt the self-binder is a triumph of mechanical ingenuity, and it is a labour-saving appliance under certain conditions, but failing such conditions it is the embodiment of a costly blunder. Any farmer will find this to be true if his corn is twisted about by wind or beaten down by rain, and he, trusting to the self-binder, has failed to secure enough labourers to get through the work without it.

Steam diggers come under the same category of costly blunders in a wet season. In the drought of last year, when there was no difficulty in finding a hard and sufficiently even surface to use them upon, they were so successful that they were proclaimed the coming power, by means of which the land would be brought under such thorough and improved cultivation that crops would be doubled and the agricultural depression at an end. This year, with the surface of the soil saturated by rain, we hear of wheels clogged so heavily by mud that they failed to propel the engine, and the forks could not enter the soil deep enough to make good work, or sometimes they would enter deeply, and others not half deep enough, so that a very uneven surface was left behind. Well, we do not at all object to a little irregularity of surface so that the soil is well stirred, but for such wet seasons as the present an implement dependent upon a traction engine passing over the land in front of it, for motive power cannot answer. Clearly it was a recognition of this evil which led to the introduction of the steam cultivator with its two stationary engines at each end of the field. The cultivator is efficient, and what is wanted to render it complete is motive force sufficiently powerful for the work at a very much cheaper rate than it is to be had at present. Are we to obtain this from electricity, or can it be had from a petroleum engine? Surely implement manufacturers would do well to turn their attention to this, for it is certain that if the requisite amount of power could be had from engines costing only a few pounds, and which, like the Otto gas engine, could be set going at full speed in a minute, not a farm would be without one or more of them.

It is quite certain that for any implement, or so called labour-saving appliance, to be really efficient, it must possess that simplicity which insures its use irrespective of weather. Here the single plough is undoubtedly triumphant, and it may be taken as the embodiment of a principle so sound that it cannot easily be driven off the land. The term "chilled iron" is now much used for what is sold as a superior sort of ploughshare. The merit of such shares consists in always having a sharp edge, and this is managed in this way. In casting the ploughshare the lower surface is in contact with iron, and this insures that part of the share becoming chilled, or intensely hard, while the upper surface is comparatively soft, so that in use the upper part of the share is wore away first, and the lower hard part retains a thin sharp edge. So much for the now famous chilled ploughs, the merit of which, if we understand it aright, simply consists in the use of chilled shares, which, always having a sharp cutting edge, may be used with greater facility than those with ordinary shares. For light sandy soil double ploughs are invaluable, doing the work exceedingly well in half the time of a single plough, and the draught is so light in such soil that there need be no extra outlay for horses. It must be understood clearly that these advantages are only to be had by light land farmers, yet we have known double ploughs to be purchased for heavy land, only to be thrown aside in disgust.

WORK ON THE HOME FARM.

So far the corn has, on the whole, come down in satisfactory condition, but the work has been much hindered by showery weather. The Wheat bids fair to yield a full bright sample when fully ripe, but the ripening is much hindered by dull weather, and progress with harvest work is at best very slow. Reports of the probable yield here and in other countries tend to show a probable scarcity of supply, and a proportionate increase in price. Australian Oregon, and Californian Wheats now realise 38s. per quarter, and this fact makes us hopeful that home-grown Wheat of this season may reach the desirable and profitable rate of 40s. per quarter. Of Indian Wheat we are told that owing to the bad harvest of last year and other causes the price is, on an average, 33 per cent. higher than it was last year, and that at present rates exporters can make no profits. All this may probably be regarded as affording no very sound basis whereon to found calculations of prospects or results of the home crop; but it is at any rate calculated to cheer and aid us in our efforts to save the Wheat under adverse conditions of weather. Everything would seem to show we "touched bottom" in the price of Wheat last year, and that we have reasonable hopes of a favourable reaction in prices this year.

Of Barley we have only mowed one field of twenty acres, and we are still unable to say what the quality of the grain will be, for the matter is certainly doubtful. Really high-class malting Barley is likely to be scarce, but the grain generally is a fine bold sample, and quantity may in some slight degree atone for a want of quality in the final result. The slow ripening of the Barley proves a serious hindrance to harvest work, much of the Wheat having to be left out in shock for quite a week after the reaping, and on farms where there are no Beans corn mowing has come to a standstill. On very many farms corn harvest and haymaking are now being done together, and excellent hay is being made. The second growth of Clover layers is really an excellent full crop, which we prefer turning to account for sheep-folding rather than for seed or hay late in a season remarkable for unsettled weather. With a superabundance of food for sheep, and a full supply of hay, the ploughing-in of Clover for Wheat will be found profitable.

OUR LETTER BOX.

Clover Pest (*R. M. S.*).—The "stuff" which comes in patches among the Clover is the common Dodder (Cuscuta trifolii). It is a parasitical plant, its seed germinates in the soil, and the slender stems run over the Clover, affix themselves to every branch or leaf with which they come in contact, feed upon and eventually smother the plants. To eradicate it not only pare the soil containing the dead patches of Clover, but a margin a foot wide around them, and burn the whole on the spot, for if you attempt carrying the dead plants and pared soil to one large fire, seed of the Dodder may be scattered about to bring more of the pest next season.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

Date. 1888. August.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 19	30.249	56.8	54.0	S.E.	58.5	68.1	43.9	111.3	38.4	—
Monday..... 20	29.994	61.4	56.4	S.E.	58.4	65.6	53.6	80.5	49.8	0.18
Tuesday .. . 21	29.641	61.3	59.5	S.W.	58.6	68.2	55.4	112.5	54.1	—
Wednesday .. 22	29.762	63.1	57.9	W.	59.0	70.7	52.6	118.8	48.3	0.07
Thursday 23	29.940	60.9	58.3	E.	58.9	66.4	50.6	94.2	44.4	0.09
Friday 24	29.6 5	65.3	60.2	S.E.	58.4	74.4	55.3	116.3	50.4	0.80
Saturday 25	29.734	63.6	58.8	E.	59.4	71.8	57.5	12 .6	54.4	0.19
	29.853	61.8	57.9		58.8	69.3	52.7	107.7	48.6	0.62

REMARKS.

19th.—Misty morning; fair day, with a little sunshine.
20th.—Cloudy day, wet evening and night.
21st.—Showery early; cloudy day except for an hour or two at midday.
22nd.—Generally fine and bright, but heavy rain storms at 11.30 A.M. and 0.45 P.M.; warm windy afternoon.
23rd.—Dull all day, with drizzle from 10.30 A.M. to 1 P.M.
24th.—Bright morning, cloudy afternoon, heavy rain 5 to 7 P.M., dull night.
25th.—Generally fine and bright, except for heavy showers at 11 A.M. and from 1.30 to 2.30 P.M.

An unsettled week of average temperature but with very little bright sunshine.—G. J. SYMONS.

THE WEATHER RECORDS.

THE numerous weather records published in these columns during the past three or four weeks have been prepared in a much more instructive and interesting manner than we expected could result from our invitation. Meteorological data are usually supplied in a series of figure details or in tabular form, which cannot be said to furnish very entertaining reading, however useful they may be for comparison. Our correspondents have taken a practical view of the matter, and instead of confining themselves to bare details of temperature or rainfall have illustrated them by the effects produced on fruit and vegetables, the flower garden occupants, trees, shrubs, &c. This is exactly what we desired, and our best thanks are due to all who have so readily assisted in recording the results of such an extraordinary season.

There is a tendency to attribute the unsatisfactory appearance of many garden crops to excessive rainfall, but though heavy storms have occurred at intervals and wrought considerable damage on gardens and farms, yet the general effect is mainly attributable to other causes—namely, sunless days and low night temperatures. In the majority of districts it does not seem that the rainfall has exceeded the average for the first six or seven months of the year, and in some cases it is below the average; but there has been a much larger proportion of wet days than is usual during June and July, and compared with these months last year this is of course still more remarkable. In one record from Hampshire, for example, it is shown that in June, 1887, the amount of rain registered was 1·41 inch, while in the corresponding month this year 3·31 inches fell. For July in the same garden (Swanmore Park), the difference is much greater. Thus in 1887, 0·26 inch of rain was measured, but this year the record for the same month was 5·48 inches, and only 94¼ hours of sunshine. At Horndean, also in Hampshire, 6·29 inches were registered in July, exceeding even one record from Westmoreland (Penrith), which is only 6·04 inches. From Cardiff Castle comes the heaviest record—namely, 7·35 inches in twenty-seven days in July as compared with 1·51 inch last year. These are examples of the heaviest rainfall records we have received, but in many other districts they range from 4 to 5 inches. In naturally dry, shallow, well-drained soils the gardens have benefited rather than otherwise, and several letters from the eastern counties refer to this, notably our correspondent at East Dereham. With a rainfall for July of 4·80 inches, he says, "It has been, on the whole, a fine time for this light sandy soil." All the writers do not take pessimistic views of the situation, but few perhaps are so happily constituted as one of our Nottingham contributors, who remarks in a contented way, "The wet, cold, and sunless weather which characterised June and July, and at which I have, with the rest of Britons, growled—ungrateful sinners!—has come to me, I am constrained to confess, full of benedictions. I have forgotten the frowns of June and July in the smiles of August. My water cisterns were empty, they are now full. My garden was gasping for rain; it is now full and plenteous with all manner of good things. The ladies get baskets and baskets of flowers daily, and plenty of fruit, and the cook is smiling and satisfied; what more can a gardener want?" Unfortunately the "smiles" of early August have been followed by very heavy "frowns," which have not increased the happiness of gardeners or farmers. Still the replenishing of springs is a public advantage that will compensate for many evils of a more partial character.

Regarding the temperature the Hampshire record may again be noted as that of a favoured district. It is stated—"The temperature reached 80° in the shade on six occasions only in June, the highest being 83° on the 24th. The lowest temperature registered was 42° during the night of the 17th. On ten nights only was the temperature above 50° during the month. July did not produce a single instance of the temperature going above 76°; this the highest on the 14th, while on fourteen occasions only did the heat reach over 70°, as against thirty-one times in 1887. The lowest temperature this year was 39° on the 9th, while on nine occasions the temperature was below 45°. On sixteen occasions during June last year the temperature was 80° in the shade, while on three days it went over 90°. During July last year the temperature reached 80° twenty six times. Nine nights only registered a heat below 52° during the month." In eastern and northern counties slight frost was registered on several days in July, not sufficient to do any material damage, but as one observer says, "Kidney Beans hung their heads a little." At Lockerbie in Dumfriesshire, however, as in other districts of Scotland, the cold was much more severe. On June 5th there were 7° of frost, and on the 30th 2°. In July there were 3° of frost on the 1st and 8th, 2° on the 11th, and slight frosts subsequently. In East Lothian the June frost did much damage, the earlier Strawberries were rendered worthless, Potatoes and Kidney Beans being similarly injured.

Kitchen garden crops have been generally fully a fortnight late, in some places even more; but one result of the rain has been a vigorous growth that in the case of most vegetables, except Peas and Beans, has been rather welcome after such a season as last year. Potatoes are disastrously diseased in too many gardens, a few have escaped, and some are only slightly affected, but the total loss is heavy. Small fruits have been plentiful, but watery and flavourless, not keeping well, and in the case of Strawberries more particularly many have decayed on the plants. Pears seem rather scarce, but Apples are a fair crop in a number of gardens, also Cherries and Plums, but the long-continued rain has not suited the stone fruits. Tomatoes outdoors appear to have failed everywhere.

With the flower garden department most of the returns have dealt rather fully, probably because the weather effects have been most discernible there, especially where tender plants are largely employed. Respecting Pelargoniums the almost unanimous verdict is "plenty of leaves but flowerless," as applied to the Zonal varieties; the bronze and variegated types have not, however, coloured or grown well, and many beds even now are thin. Very rarely have these plants given so much dissatisfaction, and where they are mainly relied upon for colour the display has been correspondingly dull. One variety has endured the weather comparatively uninjured—namely, Henry Jacoby, and this is mentioned in favourable terms by several correspondents, as it also is notable in the London parks. West Brighton Gem and Vesuvius have "braved the storm" fairly well. Alternantheras have had a bad time, as the cold prevented growth and the sunless days gave them no chance to colour, most of the red-leaved varieties except A. versicolor being quite out of character; the golden forms, on the contrary, have brightened up surprisingly, and together with the golden Spergula pilifera have furnished the chief colour in carpet beds.

The borders of hardy annuals and herbaceous plants have been most valuable this season, as though many of the delicate plants have suffered, there have been plenty of others to take their places. Ten-week Stocks have succeeded well, as also have Phlox Drummondi, Mignonette, Nemophilas, Godetias, Linums, and Eschscholtzias amongst other annuals. Of perennials a long list might be given, but some that have given most general favour are Violas and Pansies, Pæonies, Veronicas, Spiræas, Campanulas, Pyrethrums, Delphiniums, Antirrhinums, Aquilegias, Irises, Pinks, Iberis, Phloxes, and Tuberous Begonias. Quite a chorus of satisfaction is expressed concerning the last-named plants, which have to some

extent taken the place of Zonal Pelargoniums, and they seem regardless of the weather. Shrubs and trees have profited by the moist season, growing strongly, and retaining a fresh green tint. Rhododendrons have flourished, but the weather is against the maturation of the wood and buds, while Conifers have made astonishing progress in many instances.

It might be added that we have had nearly fifty communications from over thirty counties in England, Ireland, Scotland, and Wales, so that a good general idea of the weather effects can be gathered from them. It is interesting to notice what a large proportion of gardeners take careful metcorological observations, the majority registering rainfall and temperature. Such records are often very useful for after reference, and in any case it is important to all gardeners to study the weather closely.

NOTES ON ALPINES.

PRIMULAS.

The heavy and continuous rain of the present season seems to have suited many Alpine Primulas, and particularly those which come from the Himalayas; indeed, it is not merely confined to this group, for all the cortusoides (Sieboldi) section seem more vigorous than usual, and still retain their foliage, which latter in recent years has been more or less scorched and decayed. Our native Primroses, single and double, all have been benefited by the oft repeated drenchings of rains, which seemed for the time to be without end. This heavy downpour, coupled with the absence of sun for so great a period, seems to have thus far favoured a few shade and moisture loving plants, and the Primrose among the number. In a mixture of light loam, to which abundance of sharp grit has been added and about one-half of thoroughly decomposed manure, Primula viscosa nivea, the Snowy Primrose, is remarkably vigorous, and for some time past pushing forth white fleshy roots in abundance from the collar of the plants, a circumstance far from common in summer time, and with this particular plant. P. rosea was never more happy, while P. cashmeriana seems inclined to become rampant, and if a comparatively fine autumn ensues one may look for some fine heads of bloom from these two last named in the spring of 1889.

ARNEBIA ECHIOIDES.

The Arnebia has made more than usual headway, and is one of those easily grown plants which will eventually find its way into many gardens. It is not a difficult plant to grow and as slow to increase as was represented to us eight or ten years ago, but on the contrary lends itself most readily to two or three modes of propagation. It is alike suited to rockwork or front row in the border, thriving well in a rich light loamy soil of good depth. The clear sulphur yellow of its flowers have perhaps but one rival in the Alpine Wallflower, Cheiranthus alpinus, the dwarf cushions of which in spring time render it highly desirable among other good things in the spring garden. It may be that in a few years the Arnebia will become more plentiful, and nurserymen will reduce their prices for it accordingly, for good and choice as it now is, I venture to predict that the greater demand for it, which a reduction in price would bring about, would prove highly beneficial to the vendor. The fact of its perfect hardiness and robust constitution are points which all growers of it will fully appreciate.

DIANTHUS ALPINUS.

The glossy tufts of this Alpine Pink are not without beauty, even when its flowering is completed, and considering its vigour and free growth I am inclined to regard it as among the very best. Since its flowering in the early part of the year I have rooted some cuttings, which strike freely in moist sandy soil, kept close and shaded in handlights. As this species is somewhat variable from seed, it is a good rule to flower them all, discarding the inferior ones, and increase the best forms by cuttings; these root readily any time from May or June till the end of October. As it is impossible to have such a one in too great a quantity, I strongly advise all lovers of Alpines to strike quantities of cuttings annually and plant in patches on the rockery in moist sandy loam. It is one of the brightest of Alpines, and worthy the best culture. It may also be grown well in pots. One or two items seem essential to its well being, and these need plenty of water in the growing season, and a comparatively dry snug position in winter. Its rosy crimson flowers in spring are most charming and not easily matched. Speaking of Alpine Pinks reminds one of the other species near akin, such as D. glacialis and Fischeri. All these succeed in moist gritty loam in sunny well-drained positions.

ACANTHOLIMONS.

A. venustum still has the reputation of being rare, and certainly its slow growth will do much to keep it in this position for some time. Its occurrence in lists of Alpines is as rare as it is in private collections of these plants, and quite apart from its near ally from Mount Ararat, A. glumaceum. The last named makes a very pleasing edging and grows well in ordinary sandy soil in a good position. In spring its spiny tufts are covered with small spikes of rosy pink flowers, which are very pleasing, and whether placed on the rockery or used as an edging it is alike charming, and, by reason of its free growth, it should be planted in large patches to provide a good effect. In its culture an annual dressing of equal parts of sharp grit, thoroughly decayed manure and leaf soil worked well into the tufts will be found of material assistance to the plant, and if an increase of stock is needed it may be done at the same time in the following manner: Select a tuft and strip a number of the growths half off; semi-detach them as it were from the plant at the main stock, at which point will be found a heel; work your sandy soil well in, and give a watering when complete to settle the soil. The shoots thus treated will by spring have made nice roots, and may be detached at will; it may also be increased from seeds.

A. venustum may readily be distinguished by its rosy crimson flowers and semi-glaucous tufts of spiny leaves. It is thriving admirably in rich loamy soil with plenty of grit and abundant drainage. To these I can only add that it has occupied a position quite contrary to that usually recommended for it, which is a south exposure on the rockery, by being in a cool shady spot where abundance of water has been given it. Notwithstanding this, it is perfectly happy and growing more vigorously than I remember having seen it before. This charming plant and its propagation is worthy a study in itself, and I am attempting some experiments with it which I hope to record by-and-by; meanwhile let all those who possess it strive likewise.

OURISIA COCCINEA.

There are few plants to compare with the brilliant scarlet flowers of this Ourisia, and few plants more easily accommodated when its cultivation is fully understood. It loves a cool moist place in loamy soil, not necessarily heavy, but well drained; a deep moist sandy loam is far preferable to a heavy loam, cold and retentive; it will linger and die in the latter. Some years ago I had a grand specimen in a pot of this, which was the admiration of all who saw it. The position occupied by it for some two years or more was in a frame devoted to choice Alpines, and the soil employed was similar to what a grower would give his Chrysanthemums. One large plant occupied a 10-inch pot, and its vigour and free growth may be easily imagined when I say that it grew over the rim of the pot and half way down the sides. Not the least interesting feature with this plant was the fact of its being covered with spikes of its brilliant scarlet flowers the ensuing summer; indeed, so conspicuous was it that my employer requested that a prominent position should be given to it, that the numerous visitors might see it to advantage. Abundance of water was given during the spring and summer. The Ourisia on a cool moist surface will make roots in its onward course as free as any plant I know, and doing this the rest will follow as a natural consequence. It should never be placed on the dry exposed positions with hardly any soil near, and for which the pseudo-name of rockery has been given. It loves a deep soil at all times—this, with moisture, are its chief requirements.—J. H. E.

MILDEW ON STRAWBERRIES.

The drought of last summer resulted in Strawberries being attacked generally by mildew, consequently those forced indoors last spring fell a prey to its ravages. I have observed that when plants outside are attacked, and those required for forcing are raised from them, that they suffer in a corresponding manner. It is clear, therefore, that the spores are carried on the plants into the forcing house, and when the conditions are favourable it springs into activity and completes its work of destruction by the time the plants are in flower unless strong measures are taken to arrest its progress.

There can be no doubt whatever that drought is the main, if not the sole, factor in bringing this parasite, although other conditions, such as a continuance of cold, damp, sunless weather, might bring it into existence. We have grave doubts, however, on this subject, for observations point conclusively in the opposite direction. It has been noticed on plants when the weather has been the reverse of warm and dry, but these conditions have generally followed spells of bright hot weather and winds that have dried up the soil to such an extent that to keep the plants well watered has proved a work of some difficulty. Plants outside last season were

attacked to a much more serious extent than has been the case for the past nine or ten years, and the same may be said of those that were forced. Early this season mildew made its appearance outside before the flower trusses were above the foliage. This was due to the drought, for the plants displayed signs of suffering before heavy rains fell in June. A careful examination of the plants proves that cold wet weather is not favourable to the growth of mildew, but has had the opposite effect. Its ravages on the foliage are still visible, but it practically succumbed after rain commenced falling. Carefully noting the plants indoors and the atmospheric conditions under which it luxuriated indicates the same fact. The pest was at home on plants arranged close to the glass where the atmosphere was hot and dry, while in small houses with the plants some distance from the glass and in a moist temperature it scarcely made its appearance.

When plants are grown in large numbers outside the labour that would be required to destroy or even check mildew would render the work impossible, but when grown only on a moderate scale it could be stamped out without difficulty. It should be destroyed on plantations from which runners are layered, then considerable labour and loss would be avoided during the forcing season. Once the fruits are attacked they are nearly valueless, for they present a dull shrivelled appearance. Very seldom do the plants become so badly infested outside as to destroy the fruit to the same extent as is the case with fruit inside when the atmosphere is of such a nature to encourage its growth. If allowed to spread until the spores float about in the air of the house its destruction is a hopeless task. When it reaches this stage, which it quickly does, dipping and syringing with insecticides is of no use. Where mildew was not destroyed on the plants from which the stock for forcing has been raised, attention must be devoted to them during the winter to avoid an attack in the spring.

Some varieties of Strawberries do not fall a ready prey to mildew, therefore it will only be necessary to operate upon such varieties as Sir Joseph Paxton, President, and others. Vicomtesse Hericart de Thury appears to be proof against it, for I have never seen a trace upon it; even solitary plants associated with numbers of Sir Joseph Paxton kept perfectly clean while every one of the latter were attacked. The best method is to select fine settled weather and thoroughly syringe the plants with a solution of flowers of sulphur and water. A 4-inch potful of sulphur stirred into 4 gallons of water will be strong enough to kill this pest if a few fine bright days follow; but one application may not prove sufficient to insure them against an attack in spring, though I have scarcely ever known it fail or been troubled with mildew when the work has been properly done and the plants have the treatment they require during the forcing season. Last summer our plants of Sir Joseph Paxton for forcing displayed very little signs of mildew, consequently they were not syringed, and they suffered severely in spring. When dipping them, as we advised last autumn, before starting as a remedy against aphides and red spider we stirred sulphur into the solution, and on none of these plants did mildew make its appearance, but in every instance the plants of this variety that were not dipped suffered more or less according to the position they occupied and the amount of humidity that could be maintained in the atmosphere. In the future our plants will be syringed while they are outside if any trace of mildew is to be found on them, for the work as well as the solution is simple, and a large number of plants can be done in a very short time. Sulphur applied in this manner does the plants no harm. Dipping before starting the plants certainly takes longer, but those who practise it will find the time occupied well spent. Mildew on outside plants can be readily destroyed with the same solution.

When the plants are attacked in the forcing house no half measures must be adopted, or the fruit will be injured, if not ruined, in a very short time. For instance, if the plants are attacked just as they coming into flower—very often it shows itself at this stage—and they are left until the fruit is set, the plants may as well be thrown away. Often the flowers fail to set, and even if they do set they never swell kindly afterwards, the seeds only appear to grow, while the flesh is hard and never colours properly. I have seen it stated recently that a large grower removed a good portion of the foliage as a preventive. Such a remedy is nearly as bad as the disease, but I doubt very much that any such practice would be followed. It is far easier to believe that the foliage was attacked and the leaves removed in the early stages of its growth to stop it spreading to such an extent as to ruin the fruit. It can be kept under by this means if taken in time before it has perfected spores that are driven in every direction by the slightest movement of the air in the structure. I have tried nearly all the popular insecticides, and they are practically useless for arresting its progress, even at a strength that will injure the fruit and plants. The only certain cure is to dip the plants, or syringe them thoroughly with the solution I have recommended, and if left on the foliage two fine bright days it will prove effectual. If possible this should be done before they flower, directly the first speck can be seen. If it shows itself when sufficient fruits are set for a crop the whole may be dipped or syringed, fruit as well as foliage. When the fruit is ripe no trace of the sulphur will be found adhering to it if they are thoroughly and liberally syringed with clean water. Until last season we should have hesitated to put into force such a practice, but some plants were so badly attacked that it would have ruined the fruit. Having nothing to lose we tried the course I have pointed out, and with good results, for it saved the crop, the fruit being a good colour, but not quite so large as it otherwise would have been.

This mildew will not spread on Vines, so that anyone having plants attacked in a vinery need not be alarmed. Some bunches hanging closely over infested plants certainly showed traces on the small berries that fell out when the bunches were shaken after the berries commenced swelling, but no trace could be found on the others.—Wm. Bardney.

BORDER CARNATIONS.

In some districts and on some soils these seem to flourish without much attention. Old plants with an annual dressing of loam will grow for years in the same place and make huge clumps; but such treatment will not answer in all soils and situations, as many gardeners and amateurs can testify to their cost. The compost in our Carnation beds is specially prepared for them, yet we dare not trust to old plants left undisturbed all the winter. Even the old common red Clove presents a miserable appearance in spring, and more than half of them die if left in the beds in winter; and this applies to plants only a year old.

Last autumn, when taking up the young layered plants, we decided to lift the old plants also and transplant them; but, notwithstanding this was carefully done and fresh loam placed round their roots, they have again failed. Many of them died in spring, and none is satisfactory. Such plants are also very deceptive. They look well all the winter, but when the season is a little advanced and the sun gains power they suddenly collapse, and the bed which ought to afford interest and pleasure is a source of annoyance and disappointment. Wireworms are very destructive to Carnations, and plants attacked by them will go off in much the same way as described above, but they are not the cause of the disease under notice. If the old stems are uncovered and examined early in the spring they will be found longitudinally split, and unless the wound be very recent there will be multitudes of small white maggots; but they are not the cause but the effect of the wound—they are such as can be seen in any decaying vegetable matter. This is no new disease, but the query is, Why should it be so prevalent in some districts and so seldom in others, and these often in close proximity to each other? At one time I considered it was entirely the soil at fault, and there is no doubt that cold close heavy soil very much aggravates the evil; but having thoroughly drained and filled the beds with a specially prepared compost with no better results, I am convinced there must be some other exciting cause, and this conclusion is confirmed by the fact that not many years ago border Carnations flourished and grew into huge clumps here without any attention whatever. But this was before my arrival, and it is a point I cannot understand, because our soil is naturally heavy, cold, and wet, resting on a hard impervious clay.

Perhaps correspondents can throw some light on this erratic behaviour of border Carnations. In the meantime I would advise those troubled with this kind of disease to layer without delay all the stems which are long enough and to make the short ones into cuttings. If these are dibbled into a half-spent hotbed covered with 4 inches of light sandy soil and half an inch of sand on the top they will be rooted in a month. The frame must be kept shut and shaded during the day, but a little air should be put on in the evening, as if kept too confined they are liable to damp off at bottom, and sometimes they will grow at top, which is detrimental to root formation. When rooted they should be potted either singly in thumbs or in pairs in 4-inch pots, using three parts loam and one part each of leaf mould, Mushroom bed manure, and sand. After potting return them to a cold frame and keep close for a few days until they have taken to the fresh soil, after which they must have plenty of air all through the winter. They should, if possible, be plunged in cocoa-nut fibre or other light material about an inch above the rims of the pots with their tops about 6 inches from the glass. The light should be drawn entirely off except in very severe weather, and even then a little air will be beneficial, the object being to prevent their growing as much as possible, for being easily excited they will make small weak growths if kept too confined, and then no one need expect good results to follow. Those layered should be also potted in autumn, or, what we have

found better, tied up firmly in moss ; they should then be treated as described for cuttings.

Having secured a good stock of young plants the old ones may be thrown away, and if the beds are to be planted with Carnations in spring they may be prepared at once. Carnations are very fond of maiden loam, fibrous and sandy, and about half decayed, so that after removing about 9 inches of the old soil, it being refilled with new as above, good results will follow ; but such soil can very seldom be spared for such a purpose, neither is it essential to good Carnation culture. If the beds are wet and heavy lay on 2 inches of quicklime, and if to hand 6 inches of fine ballast. This should not be merely dug in the usual way, but it must be thoroughly mixed with the soil through its entire depth. In February it should be again turned over, and this time work in a good quantity of soot, bone meal, leaf mould, and Mushroom-bed manure. If the soil is light and in good workable condition it will only be necessary to work in a good quantity of half-decayed manure, and leave it to the action of the weather all the winter. The first week in April is quite early enough for planting out Carnations in cold districts, and if the plants have been properly attended to all the winter they will be strong and stocky, such as will not fail to repay the cultivator for the extra pains taken. If a thick mass of flowers be wanted they must be planted thickly, 6 inches by 4 inches will not be too thick, but to give them a chance to grow and room to layer them they had better be planted 12 inches by 9 inches. Planting should always be done when the soil is moderately dry, for the best of composts may be spoiled by working on it when it is too wet. If new loam be used a sharp look out must be kept for wireworms, for a few of these will soon ruin a bed of Carnations.

An occasional hoeing and a good mulching of Mushroom bed refuse in June, is all the attention the plants require until the flowers appear, when they must be neatly staked. Should it be very dry weather an occasional soaking of water will be beneficial, but a good thick mulching is much better, especially on heavy soil, as if much water be used on such soil it runs together and cracks badly.—J. H. W.

GRAPES SCALDING.

I CAN fully corroborate what Mr. Wm. Barâney states as to the scalding of Lady Downe's Grape not being constitutional, but it must entirely be a "fancy" on his part when he states that the berries of Black Hamburgh will "scald" as badly as Lady Downe's if the "necessary precautions are not taken." It must be very bad management indeed for the Black Hamburgh to "scald," even at midsummer. We have not had any Lady Downe's scald this season, but then we took ordinary precautions. To prevent the berries of Lady Downe's from scalding, no moisture must be allowed to settle on them, as it will do very quickly if faulty ventilation is allowed, or even the pipes permitted to become too cool. It is false economy to allow the pipes to become cold, and I believe it is through this, and then keeping the house too close, so as to allow the temperature to rise, that causes the scalding. We have no fixed temperature, but work by the "feel" of the pipes, which are kept comfortably warm. About 2 inches of ventilation is left on the top, and about the same at the front, or even more, but we regulate so as not to cause a draught. At 6 A.M. more air is given if the morning will allow, and before the temperature increases. We like the inside temperature to rise with the outside. If sufficient air is not on, the least glimpse of sun will cause the moisture to condense rapidly on the berries. Probably the reason why the scalding of Lady Downe's is so prevalent this seasou is because those in charge have not been on the alert quick enough after a heavy storm of rain, which has necessitated the drawing up of the top lights even as often as five or six times during a day.—A. YOUNG, *Abberley Hall Gardens.*

FAILURES WITH TOMATOES AND MUSHROOMS.

I WAS pleased to see a chapter on "Failures" by "K. G." Like him I cannot see how gardeners can get along and be successful without having failures. Last year I tried to grow Tomatoes in winter and failed, because planted too late. The plants made good growth but set badly, the result of the short day and little sunshine. This year I am going to try again, but plant earlier, and by the time this is in print our plants will be in their winter quarters—viz., a span-roofed house from which Melons have been cleared. Half the Melon soil will be removed, and the Tomatoes planted in what is left. Two or three shoots will be taken from each plant and tied to the wires as they grow, and if we are favoured with a moderate amount of sunshine during the next two months I hope to have some fruit set which will hang through the winter and ripen early in spring. By this mode I expect to have Tomatoes nearly all the year round. Last year we were only two months—February and March—without ripe fruits, and as they are much appreciated here I want if possible to have a good supply in early spring. The variety I am growing is Sutton's Earliest of All. We had it for our earliest crop last spring, and was greatly pleased with it. It fruited immensely and is of good flavour.

Another crop I have failed with here is Mushrooms, and I am most anxious to overcome this, but up to the present have been unable to do so. I have tried them in a heated Mushroom house, and also in an open shed, and have failed in both—that is, I have not had anything like satisfactory crops. I have had the manure from different sources, also the spawn, but with no better results. As my employer is very fond of Mushrooms I am naturally anxious to get a supply, and it is very disheartening when bed after bed fails. The only comfort is that I am told it was the same in my predecessor's time.

I know a good Mushroom grower who says he can grow them anywhere and in any house provided he has the right manure. I wish he would come and put up a bed here—I would gladly be his apprentice, and if he succeeded I would willingly own I was the cause of failure, but at present am not quite prepared to do so.—G. HILTON, *Smithills Hall Gardens, Lancashire.*

DAHLIAS AS DECORATIVE FLOWERS.

TAKING last season and the present one as types of extremes in summer weather, the one very hot and very dry, the other cold and very wet, Dahlias of all classes have come through the ordeal as well as any flowers we know. Last year they flowered early and continued late ; this year they have been later coming into bloom, though we have been cutting all sections of the flowers, singles, doubles, and Cactus since the beginning of August, and how late they will continue is a question of early or late frosts. But at any rate no flowers are standing the continued wet better than these, nor do any stand when cut better, a point of importance when so many flowers are so damaged by heavy rains that one day in the season renders them unsightly.

All varieties of doubles, whether selfs or fancies, are suitable for using as cut flowers. They are cut with long stalks and with buds and foliage, and use for furnishing large vases. The way we propagate these now is to break up the old tubers in spring after they have been slightly started, in order that no waste may be made through keeping tubers which are wanting living bud growths. These do capitally planted out in cold frames till wanted. The advantages of employing old roots are found in the plants flowering earlier and more abundantly, and in the greatly lessened risk of losing the tubers during winter. Cactus Dahlias are treated in the same manner, and in the matter of kinds wanted and quantities, cuttings are rooted in spring and kept in pots plunged deeply in soil through the summer months, these making fine plants the next year. In a season like the present young plants will hardly get into flower before winter, whereas from old plants treated as above, and old pot roots, we have an abundant supply now, and have had a good many throughout August.

Though it would be saying too much if it were stated that single Dahlias like a wet season, at the same time it may be safely said that they so little dislike it in comparison with many other plants, that a good supply of these is a feature of some importance in a season like this. They are easily propagated by division in the same way as the other sections, but after having had a very large number of named sorts through hand, I care to keep very few of these. The old white, alba ; Canary, yellow ; and Chilwell Beauty are the only named varieties grown in quantities. Carefully saved seed yields a very fine lot of plants with flowers quite as good as the majority of named varieties. The trouble of getting up a few hundred or even thousand plants is very slight—merely to sow the seeds in boxes in spring, when large enough to prick the seedlings into beds in cold frames, and thence to their flowering quarters at the end of May. A few flowers are sent indicative of the strain we have from selected seed.

GLADIOLI.—Since writing last week there are the following varieties to note in flower—viz. : 13 Shakespeare. 4 Bicolor ; a fine variety, salmon, with the lower petals creamy white. 2 Horace Vernet. 7 Caprice. 4 Opale ; a beautiful light sort. 1 Eugène Ramy ; slaty purple, a good variety. 2 Arsinoë. 1 Mabel ; light variety, fine long spike. 2 M. A. Brongniart. 2 Archduchesse M. Christine. 12 Panorama. 2 Diamant. Of Lemoine's varieties : 1 Etoile. 2 Marquis de Saporta ; scarlet. 1 Emile Lemoine ; a very pretty sort, with small dark flowers. 1 Sceptre d'Or ; straw-coloured and yellow flowers, very small, but pretty. 1 Bossuet ; shining, suffused scarlet, very fine. 1 A. Chenier ; small flowered

light variety. 2 Lemonei. 1 Talma ; purplish blotches with grey ground.—B.

[Our correspondent sends some excellent blooms of single Dahlias, large, rich and varied colours.]

VINES AND DIPLADENIAS.

An example of successful Grape culture under restricted conditions as regards the rooting medium was recently noticed in the gardens of Draycot House, Chippenham, and proves beyond doubt that extensive Vine borders are unnecessary when properly supplied with water. The house in question has done service as a vinery for many years, and is provided with an outside border, but the Grapes not being satisfactory, steps were taken to furnish the house with young Vines from an inside border. Instead of preparing an elaborate mixture, such as is generally adopted with these crops, some pure loam of good quality was obtained and deposited in an already existing narrow brick pit in the front of the house, after being provided with ample drainage. In this some young well prepared canes were planted, the old Vines being retained for supplying the crop until the young plants became well established, the older ones being well pruned to allow of good space for the younger Vines to perfect a sufficiency of leafage. The young canes have been planted a little over two years, and have furnished the whole length of roof, and also produced some beautifully finished samples of Grapes this season. Madresfield Court is represented by bunches weighing between 3 and 4 lbs., of excellent colour and very fine berries, and the same remark applies to Black Hamburgh and other varieties.

The growth made is vigorous and short-jointed, and shows a tendency to early ripening, this latter condition probably resulting from restriction of the roots, the depth of soil measuring not more than 14 inches, and about a yard in width. Such a small quantity of soil is not as a rule calculated of sufficient bulk to carry Vines over so long a period, and it may be added steps are being taken to make additions in this respect before another season commences. No doubt the secret of success lies in the matter of watering, Mr. Gibson being an advocate for abundant supplies at all seasons. Liquid manure, too, is given unstintingly, and occasional dressings of Jensen's fish manure is considered important. Very great improvements are noticeable in the Muscat house ; plenty of bunches of exhibition quality are produced this year, while previous to Mr. Gibson taking charge of the gardens the Grapes then grown were scarcely fitted for home consumption.

In the stove house are some very fine seedling Dipladenias of the amabilis type. These have been raised and grown by Mr. Gibson, and are the result of crosses between D. boliviensis and others of the Brearleyana and amabilis section, and constitute a very interesting collection. The blooms vary in colour from blush white through varying shades of pink down to that nearly approaching the deep scarlet of D. Brearleyana. They widely differ in shape and in size, some being as large as D. amabilis, while others are only a trifle larger than the old and useful D. boliviensis. They are not treated to large pots, but the vigour with which they grow testify to the careful attention bestowed on them by the grower ; some of the shoots attain a length of from 12 feet to 18 feet. That they are heat-loving plants may be proved from the fact of their being grown in a house which has not had any ventilation for the past two seasons, and shaded only with lime applied through a syringe.

Seeing the ease attending their culture, it is unfortunate that such a beautiful class of plants should be so little grown, it being a noteworthy fact that in few gardens is their cultivation encouraged. Overwatering has been the cause of many failures with Dipladenias, and to guard against this an open compost consisting principally of peat and sand ; abundant drainage should also be provided. They require a position close to the glass, and insects must be carefully guarded against. When well grown there are no plants that demand greater admiration than Dipladenias, and their usefulness for decorative purposes demands for them a position equal to that of Orchids.—W. S.

LITTONIA MODESTA.

Nearly related to the well-known Gloriosa superba, this little plant is yet quite distinct enough to take generic rank, and though of an unassuming character as its name indicates, it is of graceful habit, and the freely produced flowers are brightly blurred. Littonia modesta is a native of Natal, where it was found by Mr. John Sanderson (together with many other novelties, including one named in his honour, Sandersonia aurantiaca) during a journey in 1851 from Port Natal to Magalisberg. Most of the plants so found were transferred to the Natal Horticultural Society's Garden, then under the charge of Mr. M'Ken. Some of these were forwarded to Kew, and amongst them the Littonia, which produced its flowers in April, 1853, "three months after the tubers were planted." Visitors to these gardens may have occasionally seen the plant in flower since, but it has rarely been exhibited, and this rendered the specimen shown recently the more interesting.

In habit it is much like the Gloriosa, having tapering leaves terminating in a tendril-like point, which aids it in climbing stems or twigs. The flowers are borne in the axils of the leaves, are drooping, and bright orange coloured. The tubers are of peculiar shape, brownish, and have



Fig. 23.—LITTONIA MODESTA.

been compared to a Spanish Chestnut, and the manner of growth is very curious. It has been grown in a stove and in cooler quarters, an intermediate temperature and sandy soil seeming to suit it best.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.

NEW SERIES.—No. 9.

In this autumn of 1888 the trees and shrubs round London, if we take them generally, are fresher and greener than they usually look. Partly this is, no doubt, to be attributed to the abundant rainfall, which has kept their foliage free from deposits of smoke and dust ; also it is partly due, I think, to the fact that the coldness of last spring checked the opening of their buds, so that they did not put out an early and premature show of leaves, which have to come off before the full crop appears, and the result of which is to weaken the growth. It is very observable that in many parts of London where the ground has been much cut up by the opera-

tions of builders, by the laying gas and water-pipes, &c., such trees as may be left standing often thrive more than others growing where the soil around is never disturbed to any depth. In some London gardens the fibres of the roots of trees seem to be entangled in a hard mass of clay, fatal to their vigour, and to this perhaps is to be attributed the death of the Oaks and Yews that once grew about London, which might otherwise have made their millenniums and been venerable memorials of the early history of the City. The tree which inclines to live the longest in the metropolis is the Elm, and this, if it escapes gales, is seldom spared by trunk-mining insects.

Some London suburbs retain just the characteristics as to soil which were noted by the older gardeners, in spite of the changes of time, but our sewage system tends to make them drier than when the rain had to soak in or run off by the streamlets to the Thames. In the vicinity of Vauxhall, for instance, or South Lambeth, our ancestors rejoiced that they had brooks, enabling them to refresh their plants with far better water than they could get from the Thames. One of these was the little river Effra, rising at Norwood and flowing past banks set with Alders and Willows, under which Queen Bess is said to have rowed to Brixton. The stream has vanished under ground, but moisture-loving species like these, and the varieties of Poplars are not uncommon. Thus the well-known Oval of Kennington is set round with Willows, even as it may have been when it was the nursery garden of Michelson, an old worthy not more thought of now than the Tradescants, who made South Lambeth notable as the first English home of a variety of European, Asiatic, and African species, which at some peril to themselves father and son obtained during the seventeenth century. John Tradescant is said to have grown the Rose to a great extent; he was also the introducer of exotic Ferns. About a hundred years ago the Royal Society sent out a special Committee to investigate whether many of the shrubs or trees he had set still existed, but the number proved to be small. Also it may happen that a tree survives while its history vanishes; for instance, I was shown at South Lambeth a Poplar free from all signs of decay and of unusually large proportions to which some traditional story belonged. I am told it has, however, died out with the oldest inhabitant; yet there are those left who can point out where Chandler's nursery was close to Nine Elms Brewery, if not on the same ground, formerly celebrated for its Camellias, Magnolias, and Wistarias. Mr. Chandler was also one of those who experimented with the Chinese Chrysanthemum while that group of plants was comparatively unpopular or unknown, and obtained a number of varieties.

But one of the specially interesting events of 1888 to the South London folk has been the formation of Vauxhall Park, as it is to be called, after a strong opposition had been got up which nearly succeeded in upsetting the scheme. This will be made up of three open spaces lying contiguous—a plot of ground called the Lawn, and the gardens of Fawcett and Caroone Houses. It is an historic spot, originally an estate of the Crown, part of the extensive demesnes at Kennington, where once was a deer park, arable fields, and extensive orchards. The name of one of its later possessors is retained by Caroone House, and the companion residence was in the occupation of a well-remembered Postmaster General for about twelve years, whose activity was so remarkable considering his sad infirmity. Of course the grounds must be remodelled, but I hope most of the trees will be preserved, and some also of the plants of humbler growth. Amongst the trees bordering the Lawn, or scattered over it, beside the large Poplar already mentioned (Populus nigra) were others of that species, also the Lombardy and the White Poplars; the first of these seldom attains any height in London. A few young Willows only. It is noticeable that of this large group, the two which are commonest about the suburbs are the White (S. alba), and the Bedford (S. Russelliana); the true Sallows in this genus Salix are seldom represented. Of course the foreign S. babylonica is not unfrequent in cemeteries and elsewhere. Here I found several Mulberries of medium size, interesting because old South Lambeth was famed for this tree, much fruit on them too, but not likely to ripen. Walnut trees reminded me of the vanished Walnut Tree Walk; these also had some show of fruit. In the garden of Fawcett House were Pears, Cherries, and, on a south wall, some good old Vines. There were only straggling bunches of Grapes, and few fruits on the Pears, but the Cherries, chiefly the old Blackheart, were full; it seemed odd to be eating fruit produced within sound of Big Ben at Westminster. Elm trees were represented, amongst them a goodly specimen of the broad-leaved variety (Ulmus latifolia), some very aged Hawthorns and Hollies, and of the Ash several fine examples, well-branched and symmetrical. Robinias were distributed over the grounds, now and then contrasting with the heavy foliaged Evergreen Oak (Quercus Ilex), and the large-leaved Cherry Laurel. In the enclosed garden of Fawcett House were many old-fashioned flowers. Some prominent favourites of his appeared to be Eschscholtzias, Globe Thistles, Dahlias, Stocks, and Larkspurs. A pretty effect had been produced by a cluster of Digitalis in one corner, but its growth this season was checked by a surrounding of Hawkweed. In another part where Jerusalem Artichokes had been planted these had been left to themselves, and the moist summer had drawn up the stalks to the height of 6 feet. It was curious to discover, upon one neglected patch, a profusion of Melilotus officinalis, a wild plant which has made itself conspicuous this season in North Kent, on land where it had been seldom observed before. I should add that the enterprise owes much of its success to the exertions of Miss Octavie Hill and Mark Beaufoy, Esq.

So many of the old market gardens of London have become the sites of unsightly or badly built dwellings, that it is quite refreshing to discover one which is to be preserved as an open space. Through the kindness of Mr. Minett, the fields near the Knatchbull Road, between Camberwell and Brixton, are being formed into a recreation ground, and the walling round is in progress, but at present the laying out has not been commenced. The extent is about ten acres. It had long been cultivated by a member of the Myatt family, with others. In the Camberwell New Road close by, was at one time the arboretum of Mr. Buchanan, which supplied what was then thought a surprising variety of young trees, especially evergreens. People flocked from all parts of London in the July of 1835 to see a large Yucca gloriosa which unexpectedly burst into flower, and was reckoned to have had upon it about 2000 blossoms. Flowers in windows and gardens are still plentiful along the roads of Camberwell, which have ceased to be remarkable for the displays of nurserymen, but encouragement to horticulture is given by the show in Camberwell Green. Its three acres are turned to excellent account, the borders being filled with herbaceous plants chiefly, and the choicer flowers placed in beds amid grass plats and railed off, a necessary precaution probably, though forbidding near inspection. The geometrical style of bedding is followed, and the placing here and there a Birch, a Poplar, an Araucaria, or a Sumach on the central space has a good effect. A screen of shrubs and young trees afford a screen from the winds, which sweep at times down from the hills near. It is likely that the churchyard of St. Giles's, Camberwell, will soon be opened to the public. This contains a great variety of shrubs, but no flower beds, and has a pretty avenue of Limes. In front of the church is an old Elm, and behind it a Plane nearly as venerable. Specimens of the Fir tribe, however, were, I observed, as reluctant to grow here as they generally are about London, their preference being a sandy or loamy soil.—J. R. S. C.

HOVEAS.

This genus consists of evergreen species, natives of New Holland. All of them are very beautiful, but somewhat difficult to get into a sturdy, bushy, compact habit of growth. The flowers are either purple or a deep purple blue, and are produced most profusely on the young well-ripened wood of the previous season, a fact which furnishes the key to their successful cultivation. Another recommendation is that they all flower freely in the early spring and summer months when flowers are comparatively scarce in other departments. I shall merely instance a few where all are beautiful.

Hovea Celsii.—Habit rather straggling; height from 2 to 5 feet; leaves somewhat lanceolate; flowers deep purple blue, produced at the base of the leaves, often in whorls or masses; one of the most beautiful of the family, flowering generally from April to July.

Hovea pungens major is another beautiful species with blue flowers, introduced from the Swan River.

Hovea latifolia.—A beautiful species with leaves broader and larger than Celsii; part of the flower the standard blue and the keel purple; the flower is also larger and the plant altogether more strong growing.

Hovea elliptica, with roundish oval leaves; H. ilicifolia, with curled Holly-like foliage; H. lanceolata, spear-like leaves; H. longifolia, long leaved; and many more are all species having purple flowers, blooming from March and April to June and July, and worthy of culture where room can be afforded them, more especially as from 2 to 4 feet in height, and rather less in diameter, may be taken as their general range of growth when full justice is done to them; and all requiring similar culture, though Celsii perhaps, of all others, requires the greatest attention. I shall shortly allude to their general management.

Propagation.—This is effected by seeds. Most of them will ripen their seeds, but very few should be allowed to remain, and only those from the first-formed flowers, for two reasons: the first is to prevent the plant being exhausted of its strength; the second

is to enable us to prune back the plant as early as possible after the beauty of the flowering season is gone. The seeds being obtained as early in the summer as possible may be dried and sown as soon as ripe, or they may be preserved in a dry cool place until the following March. In both cases they will be better for being sown in sandy peat, and then plunged in a sweet hotbed, giving more coolness and air as soon as vegetation has taken place. If not sown until the following spring steeping the seeds in warm water of 130° for twenty-four hours will cause them to vegetate sooner. As soon as the plants are a couple of inches in height they must be pricked off round the sides of a pot in sandy peat with a trifle of leaf mould, and kept close for a little time in a mild hotbed, or if in the heat of summer merely a close frame until growth has fairly commenced.

Cuttings.—These should be the points of young shoots getting a little firm in April and May, or, better still, some nice stubby side shoots about 2 or 3 inches in length cut clean off close to the stem, or so near as not to injure it. Cut a cross at the base with a sharp knife, and remove merely the leaves there and one or two above—success greatly consisting in retaining as many leaves as possible, and then taking care that these leaves should act as absorbers quite as much as perspirers by keeping them in a close atmosphere, and in as much, but not more light than they can bear with impunity. For this purpose the cuttings when made should be inserted in white sand over sandy peat well drained; in fact, in all these operations more than three parts should always consist of drainage. If the cuttings are placed round a pot inverted in the inside of a larger one success will be certain, and less trouble will be occasioned for drainage than by any other mode. When settled and firmed by watering, and allowed to get dry in the shade, clean conical-shaped bellglasses should be fixed in the sand around the cuttings, and then the plants should stand in a close frame or pit, where the heat will only be a very few degrees higher than what the plant enjoyed before the cuttings were removed. If during the day the heat from the confined air should become too high, and thus have a tendency to spindle the cuttings upwards—a tendency always increased by dense shading—it is better instead of thus increasing shade to damp that already in and give a little air at the back of the pit or frame to allow the heat to escape. From inattention to this we have known valuable cuttings so attenuated that healthy plants from them afterwards could hardly be expected without great future care and trouble. A moist close atmosphere is of the first importance in striking cuttings in general, shading from bright sunlight is another indispensable; but both may easily be carried to excess, especially if the temperature is allowed to rise to a great height. Where quick rooting is an object it is much better to remove the cuttting pots after having stood three or four weeks in the cold frame to a mild bottom heat, say from 75° to 85°; but even here the top temperature should seldom average more than 50° by night and 75° by day, or in summer should seldom be much above what it is in the open air. If conical glasses are used wiping them will be more a matter of amusement than necessity, and lifting them for watering purposes will be seldom required, tilting up one side at night, and increasing the space by degrees, will be of more importance, taking care, however, to shut down close in the morning before the sun strikes upon them. I have several times shown that refracted light is better than shaded light, and that by placing cuttings at a certain safe distance from the glass shading might be altogether dispensed with—a matter of importance to amateur operators, who must sometimes depend for assistance in their absence to the not most willing hands.

Future Management.—If the plants are struck early they should be pricked out round the sides, say four of them in a 4 or 5-inch pot, or singly, if strong, into 3-inch pots. For keeping over the winter it is generally the safest and easiest mode to prick out such small plants round the sides of middle-sized pots, as the moisture, temperature of soil, &c., are more equable than when each little plant has a pot to itself, while the trouble of attendance is greatly abridged. If the cuttings are not ready to be potted or pricked off before the middle of September, provided there is sandy peat below the silver sand, they will be kept safer in the cutting pots all the winter. In either of these cases the plants should be kept on a shelf near the glass, where they can obtain the highest medium temperature of the greenhouse in winter and abundance of air whenever the external air is not stormy, not loaded with moisture nor below 38° or 40°. In either of these cases the amount of fresh air (unless heated before entrance into the house) must be limited.

Potting.—This is best done in the spring months in the case of young plants. In the case of established ones it may be done any time in summer after flowering when fresh growth has commenced. Where proper attention can be given after the plant is a foot or 18 inches high, it may be treated on the one-shift system; in all other cases the successive shift system should be adopted, and not too large shifts at a time. I need not add that drainage must be particularly attended to. To prevent the access of worms, amateurs should use caps or bowls of zinc or galvanised iron inverted over the hole in the bottom of the pot, with plenty of rough, and then finer drainage above, surmounted by a little green moss or chopped straw to prevent the earthy matter clogging the drainage. If such a plant without some of these precautions is set in the ground, even for a short time, a worm or two will try and wriggle themselves in, and as the plants neither like much lime water, nor to be much disturbed about the roots when growing, there is a difficulty in getting the slippery gentlemen dislodged. The cap is one of the best means for keeping them out.

Soil.—For young plants this should be composed almost entirely of fibry sandy peat, with a little dried leaf mould; as the plants get larger a little fibry sweet loam may be added. The larger the plant and the larger the shift the rougher should the compost be. For medium circumstances the compost will answer well of four parts fibry peat, one part very fibry sweet loam, one part silver sand, and one part of equal proportions of rough charcoal and pounded bricks or broken freestone. The largest pieces for a large shift should be less than a walnut, and the least, half the size of small peas, the very dust being sifted out before the sand is added. A slight layer of finer compost should be placed upon the surface.

Temperature.—After potting, at whatever time, the plants should be kept closer and warmer than usual to encourage growth, exposing them to sun and air by degrees. The common temperature of the greenhouse in spring and early summer suits them well when blooming, but when that is nearly over, and the plants have received their pruning, any close pit where a moister atmosphere and a higher temperature can be given them will encourage fresh growth. When that has taken place, the roots, if necessary, may be examined, and the plants returned to the same position, taking care, however, that they are more exposed by degrees before the end of autumn, so that the wood may be well matured; on this maturity depends, in a great measure, their winter treatment. Those best ripened will stand a low temperature and an abundance of air that would ruin those more coddled in the autumn. As a general rule the plants should seldom be below 45° in winter if it be desirable to keep them nice and healthy. A rise of from 10° to 15° may be allowed from sunheat. A slight shade will be wanted when growing in summer, but full exposure towards autumn. I have seen good plants that were never removed from the greenhouse, but I would perfer a closer and warmer place when making their wood than would suit the generality of greenhouse plants in summer; but if the greenhouse is kept close for the sake of growing Azaleas and Camellias, then that alters the case, and it would just be the place for the Hoveas when growing.

Training.—The trellis one-sided system, especially for plants that have no liability to twist, twine, or creep, is very properly being discarded. Every appearance of twisting, even when done to give a bush-like character, detracts from the beauty of the lovely Hoveas. The bush system must be given at once, when the plant is young, by stopping, and by tying out the side shoots from the base of the plant to the side of the pot, fastening them there to little sticks, or, better still, by strands of fine matting or worsted thread to a ring fixed beneath the rim of the pot outside. This training must also be kept in view when pruning the flowering shoots somewhat freely previously to setting the plants growing for another year.

Watering.—An essential point; the plants will neither endure the torrent spout system, nor the surface soil the dribbling from a fine rose. A medium between the two will be found the best, such as placing a large potsherd or a good-sized oyster shell on the surface of the pot and pouring the requisite supply slowly on these mediums. I have several times lost fine plants, solely, I believe, owing to the careless use of the waterpot. In winter the water should be pure, and not below the temperature of 50°. If enough is given at a time waterings will not often be required in winter. As the flower buds begin to swell more will be necessary, and a very weak solution of old cowdung will then be advantageous, but it must be weak and from old dung. When growing they must have abundance of water. During the whole period they stand on the shelves in the greenhouse, to prevent sudden extremes from sunshine, dry cold air, or brisk fires, the plants will be rendered more secure by standing in double pots, the space between them, at the top at least, being stuffed with moss or any other more suitable substance. When growing, the syringe may be applied often, but lightly, morning and evening. In winter and spring, before the flowers open, fine dustings may be given in the middle, or very early in the afternoons of fine, mild, sunny days.

Insects.—The most troublesome enemy is a white scale insect. Washing first with soap and water and gum water, and afterwards, in the course of twenty-four hours, with warm water, at a temperature not above 100° will be found the most cleanly, if not

decidedly the most effectual remedy. I have mentioned the temperature above, because, though I have cleared many plants of insects by dashing water against them at 130° and 140°, one experiment, at least, seemed to tell me but too well that the Hoveas would not endure it.—F. R. H. S.



SPORTS.

THE account of the sport which "Duckwing" has succeeded in propagating is interesting, and is just what is wanted if we are to learn anything of the nature of sports. It is plain that the Comtesse d' Oxford class is inclined to sport. I had a bloom of Mrs. Baker a few days ago, which was almost entirely splashed with white, after the fashion of Pride of Reigate, but it did not seem worth propagating. I hope that "Duckwing's" sport may turn out well; but, as I said in my last, he is lucky if he has hit upon a new and distinct shade in this numerous class.

THE ROSE SEASON.

It is early to offer any general remarks upon the Rose season; but now that September has arrived, I should like to continue my quota of observations on the weather in Suffolk during the summer months. May was very dry, and so was the early part of June. The hay was pining for rain during the whole of the growing season, and drowned directly it was cut. All through June we were looking for the burst of sun which so wonderfully changed the season of 1887 from a late into an early one; but it never came, though we had not much rain. July found us still hoping, but in vain: the cold and the wet increased. A good deal of rain fell during the first week; but in the neighbourhood of Ipswich, which has, I believe, about the lowest average annual rainfall in England, we had not much actual flooding rain till the last week of the month. Still July produced 5·20 inches, and we certainly had rain enough and to spare. Wet Julys I can remember, but never such a cold one. Never before, at any rate, did I have to go and warm my numbed fingers at a fire after cutting for the National Rose Show. Not a Rose opened or grew on the way to the Crystal Palace on that exceptionally cold night, and never surely was there such blowing of buds to be heard during "setting up," and such manipulations with budding knives and pencils to be seen.

EELS AND ROSES.

My Roses were fully out on July 16th, about ten days late. On that evening I noticed the "Midsummer Dors" (small cockchafers) swarming for the first time. These are generally very punctual at the end of June. On the morning of July 31st I went into my rosery to cut a nice lot of blooms, as I had hoped, for a wedding, and brought back in my basket eight fine eels, which I found in the Rose beds, washed out of the little stream which supplies my pool. I was very nearly sending the eels instead of the Roses. Stewed eels is not, I fancy, a usual dish at a wedding breakfast, but for my own part I would sooner have had them than those drowned, battered, and mudsplashed Roses.

A GLIMPSE OF SUMMER.

The only summer weather we have had was between August 6th and 15th, and the effect on the Roses was very remarkable. Varieties which open badly as a rule came out at once under the usual influence of a hot sun. In other seasons I have known blooms of La Boule d'Or stand for a week on a south wall in cloudless weather in July, and not open too much; but during the second week of the past August they completely expanded in the open bed in two or three days.

OUTSIDE THE ROSE GARDEN.

Everything has naturally been very late. The most noticeable instance that I observed was that of some fine old Lime trees in a park in this neighbourhood. These were in full bloom and filling the air with fragrance on August 15th. Bedding plants have been poor and annuals fair. Trees and shrubs do not seem to have made more growth than last year. Plenty of Pears, but no Apples. Strawberries poor, tasteless, and decayed. Raspberries, Gooseberries, and Currants were very large crops, but of course deficient in flavour. On the whole, I think, the season has been wonderfully productive considering the weather.—W. R. RAILLEM.

THE MIRABELLE AND GREEN GAGE PLUMS.

I SEND you some fruit raised from the Mirabelle Plum. The other seedling trees have produced small Mirabelle Plums. This variation gives some indication of the possible origin of the Green Gage.—T. FRANCIS RIVERS.

[This letter is short but suggestive. The origin of the famous old Green Gage has not been traced. The fruit sent by Mr. Rivers undoubtedly gives some indication of that origin, resembling very closely that of the Green Gage. One of the many French synonyms of the old favourite is Mirabelle Vert Double, or Double Green Mirabelle, whatever that may mean. The "Fruit Manual" contains the following historical notes relative to the Green Gage:—

"This universally known and highly esteemed fruit has been longer in this country than is generally supposed. It is said to have been introduced at the beginning of the last century by Sir Thomas Gage of Hengrave Hall, near Bury St. Edmunds, who procured it from his brother, the Rev. John Gage, a Roman Catholic priest, then resident in Paris. In course of time it became known as the Green Gage Plum.

"In France, although it has many names, that by which it is best known is Grosse Reine Claude, to distinguish it from a smaller and much inferior Plum called Reine Claude Petite. The Green Gage is supposed to be a native of Greece, and to have been introduced at an early period into Italy, where it is called Verdochia. From Italy it passed into France, during the reign of Francis I., and was named in honour of his consort Queen Claude; but it does not appear to have been much known or extensively cultivated for a considerable period subsequent to this, for neither Champier, Olivier de Serres, Vautier, nor any of the early French writers on husbandry and gardening, seem to have been acquainted with it. Probably about the same time that it was introduced into France, or shortly afterwards, it found its way into England, where it became more rapidly known, and the name under which it was received was not the new appellation which it obtained in France, but its original Italian name of Verdochia, from which we may infer that it was brought direct from Italy. It is mentioned by Parkinson, in 1629, under the name of Verdoch, and, from the way in which he speaks of it, seems to have been not at all rare, nor even new. It is also enumerated by Leonard Meager in the 'list of fruit which I had of my very loving friend, Captain Gurle, dwelling at the Great Nursery between Spitalfields and Whitechapel,' and is there called Verdocha. Even so late as the middle of the last century, after it had been reintroduced, and extensively grown under the name of Green Gage, it continued to bear its original title, and to be regarded as a distinct sort from the Green Gage. Hitt tries to describe the distinction; but as he tries also to show that the Reine Claude is distinct from the Green Gage, his authority cannot be taken for more than it is worth; a remark which may safely be applied to all the pomologists of the last century. Miller laboured under the same hallucination as Hitt, for in his Dictionary he says, speaking of the Grosse Reine Claude, 'this Plum is confounded by most people in England by the name of Green Gage.'

"We have seen, therefore, that the generally received opinion that this valuable Plum was first introduced to this country by the Gage family is incorrect, but that it must have existed for considerably upwards of a century, at least, before the period which is generally given as the date of its introduction."

THE ROMANCE OF SEED-SOWING.

(*Continued from page 172.*)

IV.—RUPTURE.—By this I mean the various methods by which seed vessels—*i.e.*, fruits—dehisce or open of their own accord, either in part, when the wind usually shakes the seeds out, or through their entire length, in which cases the contained seeds are more or less forcibly expelled. In this latter case there is complete self-dispersion, whereas in the former the opening of the vessel is the only part of the process entirely performed by the plant. Let us first glance at a few cases of complete self-dispersion.

In Bitter Cress (Cardamine hirsuta), a very common weed on dry, open banks, the pod at the proper moment when the seeds are ripe suddenly rolls its two side walls outwards and upwards, and the seeds, lightly attached to a central delicate membrane, are scattered 6 or 7 feet away from the plant. Even a puff of wind is sufficient to effect this purpose. Wallflower acts similarly, but with less force, as may be seen in any garden.

Among our wild Geraniums there are many interesting cases. Herb Robert, which everyone knows, has five seed vessels arranged around a central elongated column. Each vessel is prolonged upwards into a thin rod, which is at first attached to the column, but is slowly separated from it; the flower, which after blossoming turns downwards, now becomes erect, the rods become highly elastic, and presently separate from the column with great force, often scattering themselves and their attached vessels to as great a distance as 20 feet. We may find scores of these flowers in the woodlands, each of them with the erect central column alone remaining perfectly bare, and we must look for some time to find the scattered seed vessels far away.

In another, Geranium dissectum, or Jagged Crane's-bill, the rods remain clinging to the column together with the five vessels, the seeds only being thrown off. Curiously enough, the vessels split open on the side turned towards the central column, and it would almost seem as if this were useless, but the plant has its fashion of overcoming this difficulty. Just before the vessel splits the rod curls outwards, placing the vessel horizontally, and so at right angles to the column. The vessel gradually opens as the rod curls still more upwards, a delicate fringe of hairs keeping the seed safely meantime, until, when the rod has gone far enough to place the vessel nearly upside down, the hairs give way, and the seed is ejected. In this species, therefore, we should find the column not bare, but surrounded at its top by the five curled-up rods, each carrying its empty vessel with the inner face split and looking upwards.

In Dog Violet (Viola canina), the capsule is raised on a long stem, and at maturity opens by three valves, each holding a row of four or five seeds. The walls of the open valves now become dry, and contract, the two edges approaching each other. This after a time forces the seeds out with a jerk, throwing them 8 or 10 feet off. In Sweet Violet and Hairy Violet (V. odorata and hirsuta), the capsules are not so raised, the stem being almost absent, and the leaves all springing from close to the root. Here we find that their capsules simply open as they lie on the ground, suffering the seeds to fall out among the grass near by. Not being raised aloft, if the capsules shot their seeds, the latter would probably strike against the surrounding grass and fall back again, so the valves develope no contracting power, such being useless, and they simply open quietly. Dog Violet has found a better device for dispersion, and so in many generations has gradually developed a tall stem, from the top of which its elastic capsules can do their work with good effect.

In Common Balsam, or "Touch-me-not," the pod dehisces through its whole length, and at maturity, if we gently press the centre between the thumb and finger, it swells up under our touch, parts suddenly, and away go the seeds. I have stood at one end of a room 12 feet long, and by pressure caused a pod to throw its seeds with force against the opposite wall. Again, go and look at some of our Vetches, or at Broom in seed time, and you will find the pods split in two, with each half rolled or twisted on itself, and the seeds gone. The pods possess a layer of woody tissue at an acute angle to their axis. When this contracts the pod is, therefore, not curled up along its length, but twisted like a screw. Gorse, and some others of the Pea order, open with a sudden crackling noise and shoot out the seeds. On a hot August day you may stand by a clump of Gorse bushes and hear a series of tiny reports, as one by one the pods burst.

Two singular instances are worth notice. The fruit of the Sand-box tree (Hura crepitans) of America is about as large as an Orange, with a dozen or more deep furrows, which indicate as many internal divisions into carpels. When ripe, and under a hot sun, each separate carpel splits simultaneously, the whole bursting with a loud explosion. From this fact the plant has earned the *soubriquet* of the "Monkey's Dinner-bell!" Squirting Cucumber (Ecbalium Elaterium) is one of the Gourd order, and when ripe is full to tension of a viscid fluid. A very slight touch causes it to suddenly separate itself from its stalk, the sides contract, and through the end where it was attached, the whole contents, both fluid and seeds, are sent with a whizzing sound some feet in the air. An unwary traveller touching Echalium may quite easily obtain a baptism not to his liking. Intense heat causes spontaneous separation from the stalk without any touch. These examples of complete self-dispersion may suffice.

Of the cases where a partial dehiscence takes place, we may name a few. Mouse-ear Chickweed (Cerastium), found in almost any wild spot, has its capsule tilted laterally at the tip, and opens by ten minute teeth. The seeds rest safely until a high wind comes along, when they are shaken out and carried away. This places it in a superior position to that of ordinary Chickweed (Stellaria media), which opens all the way down, the seeds falling on the adjacent ground.

The beautiful Red Campion, with its bottle-shaped capsule, also opens by ten teeth, and is admirably fitted for wind-dispersion. The Catchfly of our corn fields, Pink, and Primrose, open in similar fashion.

Another method is that of pores, or tiny circular holes near the top, through which the seeds escape under the action of wind after the plant has opened its "windows." These may be seen in Mignonette, Snapdragon, Toad Flax, Canterbury Bell, and notably in Poppy, where the overhanging edges of the circle of stigmas protect the openings. The pores themselves are said to close in wet weather. This I have not, as yet, ascertained to be the fact myself. In those Canterbury Bells whose fruits are pendent, the capsules open at the base, which is of course uppermost in these cases. We see, therefore, that it is a useful provision that ensures the capsules opening above, so that the seeds may remain prisoners until the wind acts on their capsules, and afterwards on themselves, to carry them far afield.

In Pimpernel and Plantain the capsules open by a circular line entirely round the fruit, the top part coming off like a pill-box cover. Here, again, the wind can act when the seeds are ready for it.—H. W. S. Worsley Benison, F.L.S. (in *the Journal of Microscopy*).

(To be continued)

RED SPIDER ON VINES.

Of all the troubles which a Grape grower is heir to, none is so bad as an attack of red spider on the Vine foliage. Nothing that I am acquainted with prevents the berries colouring so effectively as having the foliage covered with red spider. Perhaps Black Hamburgh is the variety most subject to spider of all the varieties grown, for the reason, I presume, that this has more fire heat through early forcing than all other sorts together. I never yet saw Grapes of this variety colour well when the leaves were badly infested at the time the berries were commencing to colour, and that is the period when this pest most often appears.

Many remedies are recommended for its eradication, such as painting the hot-water pipes with sulphur and making them hot, which is not the least use as far as my experience goes. I think this method of applying sulphur is bad in another way. Without much care is used in thoroughly cleaning it off the pipes the following season when the Vines are in bloom, the fumes arising from the pipes when hot sometimes cause the berries to be rusted, which is a serious defect. I have seen this occur many times. Then, again, sponging the leaves with soapy water, tobacco water, and many other concoctions, but I never yet found any of these effective, not half so much as I have been led to believe. The best of all remedies is to dust the affected leaves upon the first appearance of red spider with dry sulphur, that of a brown colour is best as not being so conspicuous as the ordinary colour. With the use of a distributor the leaves can be covered with the sulphur without disfiguring the bunches.—S.

COMMERCIAL FLORICULTURE AND AMERICA.

[Read before the Massachusetts Hort'cultural Society by Mr. W. J. Stewart of Boston.]

(*Continued from page 190.*)

Most of us can remember the time when the whole cut flower trade of Boston probably would not have sufficed to keep one of our modern flower shops going. About the only flowers which could be bought in this city were the few stiffly made bouquets that were brought to town every morning, and offered for sale in the windows of some provision dealer or druggist.

What a contrast with the condition of the flower business of to-day! There are plenty of men engaged in it who in general intelligence, education, and refinement are the equals of those in any other line of trade. It is rapidly becoming a business of vast importance; with a large amount of money invested, with its wholesale, commission, and supply dealers, importers, jobbers, and retailers. It is no longer in the experimental stage, and cannot be successfully conducted at random or by guesswork. Competition and increased investments of capital have brought prices down as low as possible, and the man who does not manage his business carefully and systematically stands but a poor chance to succeed. Foresight, energy, and brains are what tell in the flower trade of to-day; and there is room in it yet for more men who are blessed with these requisites. The man who raises the best flowers in the market of any variety is always pretty sure of good sales at good prices. With such perishable articles, which cannot be produced at will, there will always occur seasons of glut, and at such times it is the man that offers the inferior stock who must go to the wall first.

The tendency of those engaged in growing flowers for the market nowadays is towards specialties. It is certainly better for a man to grow two or three things well and gain a reputation for those specialties, than to produce a little of everything indifferently. Most Rose growers now limit themselves to a few varieties, which for one reason or another they regard as the most profitable, and the best success is attained where each variety has a separate house. The number of varieties of Roses which may be considered as staple, since they are quoted at wholesale in most of the large markets in this country, is about twenty-five, as follows—Bon Silene, Safrano, Isabella Sprunt, Niphetos, Perle des Jardins, Sunset, Papa Gontier, Souvenir d'un Ami, Madame Cusin, Souvenir de Malmaison, Maréchal Niel, Cornelia Cook, William Francis Bennett, Pierre Guillot, Bride, Catherine Mermet, American Beauty, Général Jacqueminot, La France, Baroness Rothschild, Madame Gabriel Luizet, Magna Charta, Anna de Dieshach, and Duke of Connaught.

Other varieties which are grown for the market, but less generally, are Douglas, Duchess of Edinburgh, Yellow Tea, Royal Tea, Lamarque, Reine Marie Henriette, Climbing Devoniensis, Boule de Neige, and an assortment of Hybrid Perpetuals, which are forced for winter consumption. The most desirable points in a market Rose are continuous and abundant blooming, long stems bearing single buds, and robust foliage, with fragrance, clear colour, and good keeping qualities in the flower.

Quite a large proportion of Roses grown about Boston are shipped to other points in New England, Canada, and the West. The shipping trade has grown to be a very important item, and is the outlet through which our surplus finds its way, and which keeps prices up so as to afford a fair remuneration. There is no doubt that during the greater portion of the year there are more Roses grown about Boston than it would be possible to consume here, and if the shipping trade were to cease we should be swamped, and prices would at once fall far below the cost of production, bringing ruin to many.

The popularity of the Rose seems not to diminish, and it probably will not as long as the demand for novelties is supplied by new varieties. Every year brings forth fresh candidates for popular favour, most of them from the other side of the water, but the proportion of really successful ones is small as compared with the number sent out. The conditions under which a Rose is forced for market in this countr are so different from those under which it is raised and grown abroad that many Roses of European origin, whose appearance has at first given great promise, have proved utter failures, causing much financial sorrow to those who invested in them.

The Carnation has taken a fresh hold upon popular fancy within two or three years, and deservedly so, for the new kinds which have been introduced recently are in many respects great improvements upon the old varieties. To be valuable now, a Carnation must produce its flowers on single stems, so that they can be cut long. The flowers must be distinct in colour, large and full in form, and not inclined to burst at the calyx. The Violet is a popular flower the world over. The only variety which is generally saleable here is the Marie Louise, and this is subject to a disease which has baffled the most experienced Violet growers and forced many to give up its culture. The result is that those whose plants have escaped the scourge have reaped a profitable

return during the past two years. It is a singular fact that in Philadelphia single Violets are the most popular, while here they cannot be sold.

After Roses, Carnations, and Violets, the flowers most extensively grown for the market are those produced from bulbs and tubers, such as Lily of the Valley, Roman Hyacinths, Tulips, Daffodils, and Lilies of several kinds. Dutch Hyacinths, which were so much sought after formerly, are now positively unsaleable. Who would have believed it possible a few years ago that Lilies of the Valley could be produced the whole year round? Yet it is true that there is not a day in the year when these flowers cannot be supplied in quantity. Other flowers which may be considered as staple, being regularly quoted in the wholesale market, are Narcissi of several kinds, Freesias, Bouvardias, Mignonette, Callas, Camellias, Myosotis, Lilacs, Pansies, Smilax, and Ferns; also some kinds whose sale is limited to certain seasons, such as Sweet Peas, Asters, Chrysanthemums, Gladioli, &c.

The difference between the varieties called for here, and in England, is seen by consulting the prices current as published in the English periodicals. There we see quoted Tea Coloured, Red French, and Safrano Roses, with Tropæolums, Primulas, Poinsettias, Jasmine, Gardenias, Abutilons, Cornflowers, Pyrethrums, Pelargoniums, &c. So much for fashion. A wholesale dealer who should offer that list as his stock in trade would starve here.

The extent of the cut flower and kindred industries is much greater than is generally imagined. I have corresponded with such gentlemen as Peter Henderson, John N. May, August Rolker & Sons, W. S. Allen, and J. C. Vaughan, with a view of compiling some estimates which would be approximately reliable; but the figures received vary so much that it is difficult to arrive at a satisfactory conclusion. The importation of Lily of the Valley roots amounts to several millions annually; the growing of these roots for this market being quite an industry abroad. The consumption of cut Tulips alone certainly amounts to many thousands daily during the winter season, and the number of Roman Hyacinths grown is simply enormous. Cut flowers amounting at wholesale prices to one million dollars in value pass through the hands of commission dealers annually, and the amount sold by growers for the market outside of the commission dealers must be as large, if not larger.

From fifteen to twenty thousand dollars is invested annually in plants of new varieties of Roses. Mr. Thorpe estimates that there are 630 acres of ground covered with glass in this country, about one-half of which is devoted to the growing of plants and one-half to the production of cut flowers. There are probably not less than 15,000 individuals engaged in growing plants (for sale or for cut flowers) and in florists' stores.

Not less than fifty million plants are sold annually, and the importation of bulbs and plants must amount to nearly, if not quite, half a million dollars in value. Tuberous bulbs, which we formerly imported, we now export in large quantities; and the exportation of Pampas Grass has also grown to be quite a large business. One and a half millions of plumes is probably a low estimate.

But these figures give little idea of the amount of business or number of people directly or indirectly dependent upon the cut flower trade. Consider the material used in constructing greenhouses, such as glass, iron pipe and fittings, hot water boilers and steam apparatus; the labour employed and the money invested in the manufacture of plain and fancy flower pots, rubber hose, fertilisers, insect exterminators, and horticultural tools of all kinds; also the capital invested and the number of people employed in the making of ornamental baskets; and the value of baskets of foreign manufacture, of Wheat, immortelles, &c., which are imported annually. One estimate places the value of coal annually consumed at nearly four hundred thousand dollars. Tons of iron are made into wire and wire designs for florists' use; many thousands of pounds of tin-foil, also cords of wood (in the form of toothpicks for stemming flowers, and of plant stakes), are items of considerable account; while the rents paid for stores and the money paid in wages to help of both sexes must amount to a large sum. Enormous quantities of Moss, wild Ferns, ground Pine, Laurel branches, &c., are gathered in the woods every year, this one industry giving continuous employment to many people in the country. The Boston market alone consumes annually two million wild Ferns, two thousand barrels of Moss, 4 to 5 tons of ground Pine, and twenty thousand yards of Laurel festoons. These figures are for regular florists' demands, and do not take into consideration the Christmas trade in greens, which of course is very large.

We must not forget the large sums spent in illustrated catalogues, many of which are really works of art, and in postage paid on the same; nor should we overlook the educating influence of the illustrations in such publications, which are generally true to nature, with the result that the average flower painter or engraver of to-day knows better than to sketch Lilies with five petals; and needs not be told that Lilies of the Valley do not branch or that Morning Glories do not bear tendrils. The general knowledge of varieties in flowers and of their habits and characteristics, which a florist finds nowadays among his customers, is very gratifying and is significant, showing as it does the educating influence which has been at work—a result which is due largely to the enterprise and liberality of the commercial florists, who have placed the choicest productions of Nature's handiwork within the reach of everybody, no matter how poor.

What a wealth of beauty is displayed in the florists' windows to-day! The old stories we used to read in our younger days of the poor city children who had never seen a green field, a Rose, or a Dandelion are no longer true. The situation has indeed changed; and Rose buds, Violets, Sweet Peas, and Daffodils are now as familiar to the eyes of the children of the street as they ever appeared to the most fortunate of their country cousins.

(To be continued.)

CABBAGES—A CRITIQUE.

I WAS pleased to notice that "A Yorkshire Cabbage Grower," page 163, has understood part of what I wrote on "Cabbages for the Spring," page 90. He says "A Kitchen Gardener" "has nothing to learn in the art of laudation on the one hand, and condemnation on the other." That is so. Let me tell him why. I have spent so much of my own valuable time and my employer's money during the last twenty years or so in testing new vegetables, and found so many of them utterly worthless, that I have long since ceased to take any middle half-hearted course of dealing with them, letting them have it right and left, that no one can misunderstand my meaning. I have it on the authority of "A Yorkshire Cabbage Grower" that I succeeded in this, and let me ask your readers if they do not approve of a plain "Yes" or "No." I do, and I like it in others, but I must say I do not approve of beating about the bush and trying to gain admission by the back door, and I fear I have caught "A Yorkshire Cabbage Grower" attempting this. I wrote of Cabbage for spring. He objects to my discarding Early York amongst varieties most suitable for growing to come in at that time, and says there is no variety in existence to equal it for sowing in spring to come in for autumn use. I never disputed that, but I am no autumn Cabbage eater. Very few are, and surely those who do grow them at that time can find better varieties than the Early York, which is now rarely grown in any garden. If Ellam's Early is so good and so much more valuable than all others in the spring, as "A Yorkshire Cabbage Grower" says it is, why should it not be equally good in autumn, and how is the Early York preferred to it? There is a mystery here which the words of your correspondent do not explain. As to the time of sowing, to which so much exception is taken, the 10th of July proved too early year after year in our case, so it has in scores of others, and those who have tested the matter carefully prefer having medium sized and sound plants from the last week of July sowing to the very early ones which lose so much in bolting. "A Yorkshire Cabbage Grower" need not think I am romancing. I have had Cabbages as large as any one has in November and December, but their condition in March and April, especially after passing through a severe winter, did not warrant me in adopting them, or advise others to do so.

I have re-read the remarks, page 90, which have roused the ire of "A Yorkshire Cabbage Grower;" they explain themselves, and I have nothing to withdraw.—A KITCHEN GARDENER.

BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

EXCURSION TO READING AND HECKFIELD PLACE.

A MOST enjoyable event in connection with the above Association took place on Monday, August 27th, when a party consisting of about seventy members left Birmingham at 5.40 in the morning, arriving at 8.30, and were met at the station by members of the firm of Messrs. Sutton & Sons, who had provided carriages to convey the party to their extensive trial grounds. After a drive over the greater portion of this very interesting place, we alighted and made a close inspection of the excellent varieties of flowers and vegetables for which this firm has so long been celebrated, and the many and oft withdrawals of the pocket-book and pencils afforded proof that the members had found something worth recording. Having inspected as far as time would permit (as we had a very heavy day's programme before us), and the members had secured all the information they required, we were then conveyed to the London Road Nursery, where Cyclamens, Begonias, Gloxinias, Primulas, &c., are grown extensively for seed, and the first thing to rivet the attention here was the wonderful display of Tuberous Begonias grown from seed sown last January. Amongst them were to be found all the colours known to this class of plants, the flowers being of great size and substance, also more erect than usual, which is a great desideratum. Cyclamens grown from seed sown last November are wonderful examples of high culture, their short sturdy habit and the breadth and substance of the foliage being a sure indication of the excellence of the strain and the close and skilful attention bestowed on the plants. Gloxinias were fading, but there was no mistaking the excellence of the plants and strain. Having exhausted the time set apart for this nursery, we were then conveyed to the extensive seed stores, a close inspection revealing a faultless system of management. A goodly quantity of bulbs had arrived, and were being unpacked, cleaned, and labelled ready for the "season." After passing through the establishment we were conducted to the lecture hall, where a sumptuous dinner was provided. Mr. Martin John Sutton presided, and was supported by Mr. L. Sutton, Mr. W. Wildsmith, and Mr. W. B. Latham (Chairman of our Association). The Chairman briefly addressed the visitors, and expressed the great pleasure it gave them to meet and entertain such a representation of the gardeners of Birmingham, and hoped that although it was our first visit it would not be the last. He closed his remarks by proposing "The Health of the Birmingham Gar-

deners' Association," to which Messrs, Latham, Wildsmith, and Jones responded.

We next proceeded to Heckfield Place, a drive of about nine miles. A hearty welcome awaited us, not only from Mr. Wildsmith, but likewise from his generous employer, Viscount Eversley and Miss Lefevre; the latter came out on the terrace and seemed extremely pleased to see the party enjoying their visit. Mr. Wildsmith conducted us round the place, being extremely anxious that nothing of interest should escape our notice. Having viewed the whole of the garden, houses, and pleasure grounds, and tried in vain to find a weak point in Mr. Wildsmith's management, we retired to a marquee where tea had been provided by Mrs. Wildsmith. Mr. Wildsmith was asked to convey a hearty vote of thanks to Viscount Eversley and Miss Lefevre for their kindness in allowing us to view their beautiful gardens, and a similar proposal to Mr. and Mrs. Wildsmith was carried with acclamation. The members were delighted with the visit, and freely expressed the opinion that a more charming or better kept place it would be impossible to find. Reading was reached in time for the 7.30 fast train for Birmingham, where we arrived at 10.5 P.M.—J. H.



EVENTS OF THE WEEK.—September 6th, Royal Caledonian Horticultural Society, Autumn Exhibition (second day). On Friday and Saturday, September 7th and 8th next, the Fruit and Dahlia Shows will be held at the Crystal Palace, Sydenham. At the same place there will also be a Conference of Fruit Growers at 3 P.M. on Friday and 2 P.M. on Saturday. The Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall on Tuesday the 11th inst. On Wednesday the 12th inst. the National Chrysanthemum Society will hold an Exhibition of early-flowering Chrysanthemums and Dahlias in the Royal Aquarium, Westminster. The Brighton Show is fixed for that and the following day, as also is an Exhibition at Glasgow. Bulb sales by Mr. J. C. Stevens at 38, King Street, Covent Garden, every Monday, Wednesday, and Saturday.

—— AT the next meeting of the Fruit and Floral Committees of the ROYAL HORTICULTURAL SOCIETY in the hall at Westminster, on the 11th inst., Dahlias, Begonias, Asters, with fruit of various kinds, are expected to be well represented.

—— WE are informed that by the permission of Lady Bateman a Fête was held in OAKLEY PARK GARDEN, SCOLE, SUFFOLK, last week, for the benefit of the Gardeners' Royal Benevolent Institution, with the satisfactory result that though the weather was unfavourable Mr. A. McMillan, the gardener, has been able to forward to Mr. Cutler £18 17s. 6d. as the profits of the fête.

—— GARDENERS' ORPHAN FUND.—We have the pleasure to announce that at the flower show held at Heckfield Place, on August 28th, Mr. Wildsmith, the Local Secretary for that district, collected the sum of £5 from three boxes.

—— WE are informed that the wife of MR. JOHN ROBERTS, who has endured a long and painful illness with great patience and fortitude, died at Gunnersbury Park Gardens on Saturday last.

—— SHREWSBURY SHOW.—Amongst the miscellaneous exhibits at this Show we omitted to mention that Messrs. W. & J. Birkenhead, Sale, Manchester, had a collection of Ferns, remarkable for number of varieties and good health.

—— CHRYSANTHEMUM SHOW FIXTURES.—The annual Exhibition of the Pembrokeshire Chrysanthemum Society will take place on November 9th and 10th, and that of the Winchester Horticultural Society on November 13th and 14th.

—— GARDENING APPOINTMENTS.—Mr. Charles Sutton, who has been foreman at Willey Park Garden, Broseley, for the past four years, has succeeded Mr. Gray as head gardener to Earl Stanhope, Chevening Park, Sevenoaks, Kent. Mr. C. Sawyer, for the past four and a half years principal foreman at Cricket St. Thomas, Chard, Somerset, has been engaged as gardener to the Marquis of Hertford, Ragley Hall, Alcester, Warwick.

—— AT a FRUIT CONFERENCE held at St. Albans on Tuesday evening, Mr. Sampson Morgan, amongst other things, is reported to have said—"Freehold land in plots suitable for the culture of early produce and choice fruit could be had at an average rate of £20 per acre, or at an annual rental of £1. Upon each 2-acre plot might be erected a cottage in connection with which he would give to each labourer 50 feet of glass house, or 100 feet of frames, or an extra quantity of fruit trees instead. From each plot a steady and industrious man could obtain a permanent living, sufficient for himself and family. The cost for the 2 acres, cottage, glass erections, 200 special fruit trees, seeds, plants, &c., would be £125, which let to return 5 per cent. on the investment would mean £6 5s. per annum. Thus for 2s. 6d. each per week a worthy labourer could secure a perfect little homestead from which could be raised poultry, eggs, fresh and preserved vegetables, fruit juices, essences, and hardy fruit, as well as choice early produce of every kind." We doubt if all our readers are equally sanguine that ordinary labourers could make for themselves such an arcadia as suggested—at least, in rural districts remote from large centres of population, but shall be glad to hear what practical cultivators have to say on the subject. Mr. H. Hobday advocated a system of culture, giving a tenant "freedom to plant with full power to sell or remove not only fruit trees, but every other kind of garden produce." Mr. W. F. Emptage considered the "laying down of land under grass had done more to bring about agricultural depression than any foreign competitor; recommended planting the Keswick Codlin and Blenheim Orange Apples, and was of opinion that Black Hamburgh Grapes under glass without fire heat could be made to pay at 4d. per lb."

—— MR. T. S. WARE, Hale Farm Nurseries, Tottenham, sends us a few flowers of ANNUAL POPPIES of what are termed the "Shirley" type. They are derived from Papaver Rhæas, and, as we have frequently noted, are extremely pretty, white, blush, pink, rose, and crimson, often edged with white, very delicate and fugacious, but presenting some charming colours.

—— THE raiser writes, "I send you a few blooms of CARNATION EDWIN MOLYNEUX raised last year from seed, and certificated last week at Salisbury. It is a capital border variety, flowering profusely, as many as fifty to sixty flowers on a plant, which are from layers last autumn. I have not seen a single flower which has been at all split in the calyx. In a cut state it is effective, particularly when arranged in a mass. The enclosed flowers are small, as it is getting near the end of the season. The flower stalks are stout, very erect, thus rendering it a first-rate border plant. Unfortunately it has no fragrance." The variety is useful, and for borders very free and strong, the flowers closely streaked with bright red on a yellow ground. We have grown one exactly similar in character for several years.

—— GARDEN AND FARM INSECTS.—"Entomologist" writes, "The season has indeed been unfavourable for gardeners, but in the range of my inquiries this fact has come out, that, although during the early summer caterpillars were very numerous, since the heavy rains and cold winds there has been a diminution of insect foes of all sorts. There has also been a scarcity of friendly insects, "lady-birds" for example; the Coccinellæ group have been few as yet in this part of Kent. This may account for the abundance of aphis on the Hops; that unfortunate plant has suffered much from this and other insect enemies. Miss Ormerod has noted that in the Midlands the Wheat crops have upon some fields been greatly damaged by the aphis granaria, perhaps others also. In going through one field of Wheat about a month ago I found examples of a sawfly larva in the ears, but I regret that I did not identify the species."

—— NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the Committee took place at Anderton's Hotel, Fleet Street, E.C., on Monday, the 3rd inst., Mr. E. Sanderson, President, in the chair, there being a large attendance of members. The minutes of the last meeting having been confirmed, an interesting communication from the Secretary of the Victorian Horticultural Association, Melbourne, was read, and the Secretary, Mr. W. Holmes, said that a deputation from the Association had subsequently waited upon him for information as to the working of the Society in this country, and that a very pleasant meeting had resulted. The following Societies were admitted into affiliation:—The Barnsley, Hampstead, Isle of Sheppey, Stroud, and Truro Chrysanthemum. Mr. G. T. Miles of Wycombe Abbey Gardens, was appointed

one of the judges of fruit and vegetables at the November shows at the Royal Aquarium in the place of the late Mr. John Woodbridge ; and this being the first meeting of the Committee since his decease, a vote of condolence with his family was unanimously passed. The Secretary reported that representatives of the National Chrysanthemum Society had met representatives of the Sheffield and West Riding Chrysanthemum Society to arrange the preliminaries of the Provincial Show on November 16th and 17th ; that this had been done in the most satisfactory manner, and there was every reason to believe it would prove highly successful. Two new Fellows and forty-eight new members were duly elected, bringing the number of members up to 510. The Secretary, regretting the unavoidable absence of the members of the Catalogue Revision Committee, said the publication of the revised catalogue was in a very forward state, and he hoped copies would be in circulation by the Show on September 12th. The schedule of prizes for the first Provincial Show at Sheffield on November 16th was laid upon the table ; also that of the Barnsley Chrysanthemum Society. The proceedings closed with a cordial vote of thanks to the Chairman.

—— Show Officials Exhibiting.—We have received the following note, which we publish :—"On August 30th there was held at a noted seaside town in Norfolk the annual Exhibition of plants, flowers and vegetables, and as dissatisfaction was shown by exhibitors at some of the awards I shall be glad in your next issue of your opinion on the following facts :—The cut-flower tent was under the entire control of the largest exhibitor, a local florist, who went round with the judges when they (or he) were making the awards. In this tent he and a member of his family took some fourteen prizes, and in the pot-plant tent some seven more. The judges in the two tents I understood were gardeners in the neighbourhood, and I ask if you consider this arrangement one likely to have given entire satisfaction to other exhibitors, and especially to amateurs from a distance."

[Although the prizes in question may have been properly awarded it is scarcely possible that the arrangement in question could give satisfaction to the general body of exhibitors ; and "amateurs from a distance" could not repose confidence in any society which allowed an exhibitor to have the entire control of a show and assist the judges in their duties.]

—— Wakefield Paxton Society.—The following is the programme of meetings for the third quarter, session 1888. Meetings are held at the Society's rooms, "Saw Hotel," Westgate, each Saturday evening, commencing at 8 p.m. September 1st, the Carnation and Picotee Exhibition ; essay by Mr. G Armitage, Morley. September 8th, "A Few Hints on Watering," Mr L. Twigge. September 15th, "The Pea ;" exhibition and discussion. September 22nd, "Habits of Plants," Mr. S. Ballinger, Barnsley. September 29th, "Reminiscences of a Yorkshire Naturalist," Mr. C. Rigg ; (sale of papers). October 6th, "Air Pollution as Affecting Plant Life," contributed. October 13th, "The Potato" (with specimens), Mr. W. L. Skinner. October 20th, "Fungi and Fairy Rings," Mr. W. Hudson. October 27th, "Curiosities of Plant Life," Mr. J. Haigh, Sheffield ; (sale of papers). November 3rd, "The Thrush Family as Seed Distributors," Mr. G. Parkin. November 10th, "Germs and the Germ Theory," Mr. H. Crowther, Manchester. November 17th, "Insects Parasitical on Plants," Mr. West, Rotherham. November 24th, Chrysanthemum Exhibition ; essay, "A Review of New Varieties," Mr. T. Garnett. At the ordinary meeting of the Society held on Saturday evening last Mr. J. G. Brown presided, and Mr. A. Goldthorpe occupied the vice-chair. Mr. W. Daniels, gardener to Mrs. Hague Cook, Hall Croft, Mirfield, was the essayist, the subject being Liliums. Mr. Daniels bases his practice on careful study of the plant requirements, starting with the structure of the bulbs and the annual character of the rootlets. A useful lesson was conveyed of the necessity of understanding these peculiar characteristics, on which generally speaking some amount of misconception has prevailed. Half a dozen stands of magnificent flowers of the Lilium lancifolium type were exhibited by the essayist. The usual vote of thanks was conveyed to Mr. Daniels after a long and animated discussion.

A SAD CASE.

Your kind insertion of the letter in last week's issue has been the means of bringing several donations to the fund for the relief of the late Joseph Richardson. The sufferer died on Tuesday last, and was laid to rest in Calverton Churchyard on Friday. He desired me to express his gratitude to you for your prompt donation and assistance to him in his last moments. May I ask you to mention his death in your columns? Any further assistance that may be obtained will be handed to his widow, who is left with six children totally unprovided for.—E. Steward, *2, Exchange Row, Nottingham.*

[This adds one more to the many cases that prove the desirability of strengthening the Gardeners' Orphan Fund, in order that permanent assistance can be rendered to necessitous applicants.]



DISAS.

Though slightly puzzling to some cultivators Disa grandiflora is a favourite in the majority of Orchid collections, and it is



Fig 24.—DISA LACERA.

more frequently seen in good condition than was the case a few years ago, thanks probably to the ready manner in which successful growers have communicated the results of their experience. But there are numbers of other Disas which, if not possessing such large or brilliantly coloured flowers as D. grandiflora, are yet attractive in no ordinary degree, and amply deserving of the few attentions they claim. The Cape of Good Hope is especially rich in terrestrial Orchids, and has been described as their head quarters in the southern hemisphere. Of Disas alone 100 species are known, and some of these were described by Thunberg in his "Flora Capensis." Amongst them are the subjects of the two illustrations, Disa lacera (fig. 24) and Disa racemosa (fig. 25), both of which have recently flowered, been exhibited at the Royal

Horticultural Society's meetings and certificated by the Floral Committee.

DISA LACERA.

From Mr. A. H. Smee's garden at Carshalton a plant of a "blue Disa" was sent to the R.H.S. meeting on August 28th, when a botanic certificate was awarded for it. The flowers are small, of a bluish purple hue, and are produced on a slender scape without leaves, as shown in our illustration. Alone it is not a very conspicuous plant, hut associated with others the flowers have a good appearance, owing to their distinct colour, though this is by no means the brilliant hlue some might be led to expect from glowing descriptions given in past times of the blue Disas at the Cape. It has, no doubt, heen carefully determined, but several reliable authors mention D. lacera as having white or whitish flowers, and it so appears in Thunberg's "Flora Capensis." As recently noticed in this Journal, Mr. Smee grows his Disas out of doors on a lattice suspended over a stream of water and shaded hy trees.

DISA RACEMOSA (D. SECUNDA).

With regard to D. racemosa, it is somewhat strange that although known to botanists for so many years it should not have been introduced to cultivation, or at least flowered, until last year. Mr. J. O'Brien of Harrow-on-the-Hill introduced this with several other Cape Disas and rare terrestrial Orchids, and flowers were produced for the first time in Octoher and November 1887. In May of the present year a strong plant was also flowered in the Royal Gardens, Kew, and when exhihited at Westminster on May 22nd it attracted much notice from the orchidists and other visitors, a well merited certificate heing awarded for the plant. The flowers are produced in slightly one-sided racemes, to which character the synonym D. secunda is due, and are distinguished by their bright rosy crimson colour, a very pleasing tint in contrast with white or light-coloured flowers. It is not a difficult plant to grow, but needs a watchful guardian, and in an ordinary cool house with Disa grandiflora, out of doors in a sheltered position, or in a frame, it has been found equally healthy and satisfactory.

SPATHOGLOTTIS VIEILLARDI (S. AUGUSTORUM).

A BEAUTIFUL Orchid described by Reichenbach as S. Augustorum, exhibited hy Sir Trevor Lawrence at a meeting of the Royal Horticultural Society on July 13th, 1886, and certificated by the Floral Committee, has been found to be identical with a plant previously described by the same author, and Sir Joseph Hooker gives the following history of the plant, accompanied by an excellent coloured plate, in the "Botanical Magazine" for the current month :—

"Spathoglottis Vieillardi was first made known by Dr. Reichenbach's description published in the 'Linnæa' in 1877, taken from specimens collected between 1861 and 1867 in New Caledonia by the botanist whose services and name it deservedly commemorates. It had, however, been previously collected (in 1853) in the Isle of Pines (one of the same group) by Mr. MacGillivray, naturalist to Captain Denham's voyage to the Pacific, specimens from which source are in the Kew Herbarium. On the Spathoglottis Augustorum flowering at Kew Mr. N. E. Brown recognised its identity with the previously puhlished S. Vieillardi, and I am unable to detect any difference between the two plants. It is to be observed, however, that the Straits of Sunda, from whence S. Augustorum was sent by the two collectors, Auguste Linden and Auguste De Ronne, are very far from the New Caledonia Archipelago, and the presence of the same terrestrial Orchid in such distant localities was hardly to have heen antieipated. Apparently the same species has been collected in the Banda Islands by Mr. Moseley when on the 'Challenge' Expedition in 1875. Mr. Linden states that the figure in 'Lindenia' represents a very poorly developed state of the plant, but except that the leaves are shorter and flowers a third larger it accords in development with that here given, and with the Herbarium specimens. In both the raceme has only commenced flowering, for as flowering advances the raceme lengthens, and the lower part from which the flowers have fallen is clothed with the persistent deflexed imbricating bracts.

"The specimen here figured was purchased iu 1887 in Messrs. Protheroe & Morris' auction room. Mr. Watson informs me that it is the strongest and best grower of all the cultivated species of Spathoglottis. It flowered in the tropical Orchid house at Kew in September of last year.

"DESCRIPTION.—Pseudo-bulbs 2 inches long, ovoid, at length nearly naked. Leaves 1 to 2 feet long by 2 to 2½ broad, sessile, spreading and recurved, elongate-lanceolate, gradually acuminate, closely costate and plicate. Scape from the base of the pseudo-bulb, 12 to 18 inches high, robust, terete, with three or four distant short appressed subacute herbaceous sheaths. Raceme at first corymbiform, lengthening to 6 inches; bracts 1 inch long, herbaceous, broadly ovate, subacute, concave; pedicels and ovary half to 1½ inch long, puherulous. Perianth 2 inches



FIG. 25.—DISA RACEMOSA.

in diameter. Sepals and petals very pale lilac or nearly white, ovate-oblong, subacute. Lip about as long as the sepals; lateral lobes small, erect, and incurved, subtruncate, orange-hrown, with

two large tumid orange calli speckled with red occupying the disk between them, and each callus produced at the base into a short spreading lobule ; midlobe small, lilac, on a long slender stipes variable in form from trapeziform with rounded sides and an obtuse or acute tip, to very broadly obcordate. Column slender, incurved. Pollinia eight, with slender caudicles."

In this Journal for September 23rd, 1886, page 277, an illustration was given of the Burford Lodge specimen under the name of S. Augustorum.

REVIEW OF BOOK.

Treatise on the Cultivation of the Pansy. By ALEX. LISTER. Paisley : Alexander Gardner, 1888.

THIS modest production of fifty-six small pages contains a variety of interesting and useful information respecting the Pansy, and possesses especial value as the work of a practical cultivator who has distinguished himself in reference to these popular flowers. After an introductory note, Mr. Lister devotes chapters to "Propagation from Seed," "Propagation from Cuttings," "Culture," "Gathering and Preparing Blooms for Competition and Exhibition," "Mildew," "Properties of Show Pansies" and "Fancy Pansies," all of which are treated concisely and clearly.

We quote the remarks on propagation from cuttings as seasonable information, and a good indication of the author's method :—In order to perpetuate and increase any new and good variety of Pansy, there are only two ways—either to propagate from cuttings or by division of the root. The latter method is rather a clumsy way, and for many other reasons objectionable ; in some cases it may be resorted to, but to those who intend growing for competition cuttings are by far to be preferred. As I have recommended in propagating from seed, so also in propagating from cuttings—propagate only from the best and healthiest plants. Although cuttings can be struck from unhealthy plants, it will save a good deal of annoyanec and disappointment if such plants are passed by when cuttings are being gathered. In selecting them choose short stumpy cuttings as near to the root as possible. Of course, when a variety is scarce one has to take all sorts of cuttings which are to be had, so as to make the most of the plant, but where such is not the case it is more satisfactory in every way to choose the best ; they strike more easily, are more uniform in the propagating bed when put in, stand the winter better, grow more vigorously when planted out, and, as a matter of course, everything else being equal, yield better blooms.

September is the best month in which to put in cuttings. They can be put in at any time during the season, but by putting them in before this time they will grow a good deal, so that by the time the season arrives for planting out they will be rather leggy. By propagating in September the cuttings have plenty of time to make as many roots as will be necessary for their healthy existence, and by the following March the plants will be short and stubby, and just be in the proper condition to begin the operations of the season with every prospect of success.

The best place to put in Pansy cuttings and to preserve them through the winter is a cold frame. The best position is the one having a northerly exposure at the back of, but not too close to, a wall, in which to place the frame, as in the early months of the year when frosty weather prevails they are not so much exposed to the action of the sun's rays, which is very injurious to all plants of such a soft texture as the Pansy. In preparing the ground, set apart from the frame, the soil should be dug at least spade deep, and having placed the frame upon it, prepare as much soil—consisting of equal parts of good loam, leaf mould, rotten dung, and fine sand—as will cover the surface to the depth of 6 inches. Having distributed and levelled this over the frame, take the same soil, adding to it another part of fine sand, and pass it through a half-inch riddle ; spread this again equally over the surface to a depth of 4 inches, and level it so that in no part of it shall the surface be more than 6 inches from the glass when the sash is put on. Press the soil firmly with a board or the back of a spade, give it a watering with a rose, let it stand for an hour, after which the operation of dibbling in the cuttings may be proceeded with. Assuming that such cuttings as I have indicated have been gathered—that is, nice short healthy cuttings having not less than four or five joints, with a good sharp knife take off the leaves from two of the joints, cutting clean and close to the stem without injuring it, then cut it clean across immediately below the lowest joint, when it is ready for dibbling in.

After having prepared as many cuttings as may be thought necessary for the time being, and having labels prepared and ready on which to write the names of each variety, begin by making a line, at about 2 inches from the left hand end of the frame, and having stuck in a label with the name of the variety to be put in first, a small dibber of about the thickness of one's finger, and 6 or 7 inches in length is used. With this a hole is made, the cutting inserted and well firmed by again using the dibber at a little distance from the side of the cutting. Great care must be taken that the cutting be properly firmed, that it be equally pressed all over that part of the stem which is underground, and that it be not subjected to the operation of hanging, that is of firming the cutting at the neck or at the surface, and leaving it open and loose at the root end. This is a point of the utmost importanec, the neglect of which is often attended with disaster, of which I myself have had bitter experience. A few seasons ago I gathered and dressed my cuttings myself, and to one of my assistants, in whom, at the time, I had every confidence, I entrusted the dibbling of them in. As time went on, they did not seem to make any progress, I could not conceive what was the matter, and as I could not help myself, for I had put in every cutting I could gather, I had just to wait patiently and watch the result. As the spring came they began to drop off altogether, so that out of about 20,000 cuttings I was not able to lift more than 5000 plants. This was a lesson which I am not soon likely to forget, for in addition to my own loss from a pecuniary point of view, I was compelled to disappoint many of my best customers.

Having finished the first row it will be noticed that a hole is left by the dibber alongside of each cutting, this is filled in by having close at hand a portion of dry fine sand, levelling it with the hand. The second row is then proceeded with 3 inches apart from the first. A very good plan, and one which I adopt, is to have a piece of board 3 inches broad and its length nearly the breadth of the frame. As each row is finished, to lay it on its flat on a line, and close to the last row of cuttings put in, press slightly, then turn it on its edge and press it, so as to leave a mark, which forms the line in which to insert the cuttings. By this means a nice evenly surface is left behind, the rows are sure to be at equal distances, and when the frame is full it gives the whole a neat finish. After giving a good watering with a fine rose, put on the sash, keep it closed and shaded from the sun, so that the cuttings may not be allowed to flag. In about ten days or a fortnight air may be admitted to them by tilting up the sash, and shading may shortly be dispensed with altogether, as the more light and air they have the better, and with the exception of hard frost the sash should never be closed upon them day nor night. By adopting this course the plants are not drawn up, neither are they weakened, and when hard weather does come they are more able to stand it than if they had been coddled too much. With the exception of keeping them clean, and of course protecting them from severe frost by closing the sash and throwing a mat over it at night, they will require very little attention during the winter months and on till the time of planting out. A fortnight or three weeks before this time arrives if the weather be favourable remove the sash entirely from the frame to harden them off, so that they may suffer as little as possible when transferred to the open ground.

TUBEROUS BEGONIAS AT MOTE PARK GARDENS, MAIDSTONE.

THAT the popularity of the Tuberous Begonia is rapidly spreading we have ample evidence on all sides. It is now rarely we enter the exhibition tent, whether local or otherwise, but we see admirably flowered specimens, while in almost every private establishment valuable collections have been formed both for the flower garden and the conservatory. As regards the latter, I do not remember ever seeing a more beautiful sight than that of a house full of them in the above gardens, and which I had very recently the pleasure of inspecting. Something like 500 grandly flowered plants were neatly arranged, the majority occupying stages erected one above the other, while the rest were placed on a long narrow one in the front of the house. I noticed the plants were somewhat rather closely arranged, so that on entering the house the eye immediately rested on a solid mass of bloom. Several of the individual flowers were marvellous for size, some of which measured close on 7 inches in circumference, while the colour varied considerably, the most conspicuous being pure white, deep canary yellow, and apricot colour. I also observed that the pots are not extra large, which, considering the admirable condition of the plants shows they are at the hands of an adept. Mr. Davies informed me the strain was principally that of Messrs. J. Veitch & Sons.—H. M.

THE STONE PINE.

THE Stone Pine may perhaps be a native of China, where it is plentiful, as in the south of Europe it is seldom seen in situations far removed from human habitations. It occurs in the south of France, in Spain, in Greece, and in Barbary ; but it is most closely associated in our minds with Italy. The brilliant skies of the landscapes of Claude have their effect frequently heightened by the contrast with its heavy masses of dark foliage. Gilpin is most enthusiastic in its praise :—

"After the Cedar," he says, "the Stone Pine deserves our notice. It is not indigenous to our soil, but, like the Cedar, it is in some degree naturalised ; though in England it is rarely more than a puny, half-formed resemblance of the Italian Pine. The soft clime of Italy alone gives birth to the true picturesque Pine. There it always suggests ideas of broken porticos, Ionic pillars, triumphal arches, fragments of old temples, and a variety of classic ruins, which in Italian landscape it commonly adorns. The Stone Pine promises little in its infancy in point of picturesque beauty ; it does not, like most of the Fir species, give an early indication of its future form. In its youth it is dwarfish and round-headed, with a short stem, and has rather the shape of a full-grown bush than of an increasing tree. As it grows older it does not soon deposit its formal shape. It is long a bush, though somewhat more irregular, and with a longer stem ; but as it attains maturity its picturesque form increases fast. Its lengthening stem assumes commonly an easy sweep. It seldom, indeed, deviates much from a straight line ; but that gentle deviation is very graceful, and, above all other lines, difficult to imitate. If, accidentally, either the stem or any of the larger branches take a larger sweep than usual, that sweep seldom fails to be graceful. It is also among the beauties of the Stone Pine that, as the

lateral branches decay, they generally leave stumps which, standing out in various parts of the stem, beak the continuity of its lines. The bark is smoother than that of any other tree of the Pine kind, except the Weymouth; though we do not esteem this among its picturesque beauties. Its, hue, however, which is warm and reddish, has a good effect; and it obtains a kind of roughness by peeling off in patches. The foliage of the Stone Pine is as beautiful as the stem. Its colour is a deep warm green; and its form, instead of breaking into acute angles, like many of the Pine race, is moulded into a flowing line by an assemblage of small masses. As age comes on its round clumpish head becomes more flat, spreading itself like a canopy, which is a form equally becoming; and thus we see what beauty may result from a tree with a round head, and without lateral branches, which requires, indeed, a good example to prove. When we look on an Ash or an Elm from which the lateral branches have been stripped, as is the practice in some countries, we are apt to think that no tree with a head placed on a long stem can be beautiful; yet in Nature's hands, which can mould so many forms of beauty, it may easily be effected."

It is doubtful whether the Stone Pine was grown in England before the time of Evelyn, or even before 1750, about which date Peter Collinson planted it, together with all the Conifers he could collect, at his house at Mill Hill, where many of the trees still remain. After the establishment of the beautiful pinetum at Dropmore, at the beginning of the present century, the taste for the regular but graceful outlines of the Conifers became general; but the Stone Pine is rarely seen with a height of 30 feet in this country.

In the south of Europe its wood is used for masts and general carpentry; but it is chiefly valued for its large edible seeds, which are used as food wherever the tree grows. They are three-quarters of an inch long without their wings, and about half as broad, and, being entirely free from resin, have a sweet taste, resembling that of the Hazel Nut. In Pliny's time they were preserved in honey, and now they are commonly used at dessert, or in sugarplums, instead of Almonds. If not kept in the cone, however, the abundant oil they contain becomes speedily rancid. Besides being much eaten by squirrels, they form the chief food of the cross-bill, a bird which occasionally visits this country, and whose beak is specially modified for their extraction from the cone. —(*Cassell's Familiar Trees.*)

THE WEATHER AND GARDEN CROPS.

BERKSHIRE.

We are eight miles N.E. of Newbury, 450 feet above sea level. Our rainfall from June 20th to July 31st was 6·30 inches, as against 1·35 inch during the same period last year. Rain fell on twenty-six days in July, with a total of 4·61 inches for the month. The aspect of vegetation shows a great contrast to last season. Bush fruits and Strawberries were plentiful and good, the Gooseberry caterpillar was troublesome, and in fact I consider this year more notable for the caterpillar plague than anything else, and the greatest hindrance from a gardening point of view. Our Apples, Pears, Plums, and Cherries on standards and pyramids are a complete failure owing to the ravages of the caterpillars at blooming time. Morello Cherries on walls, good crops and fine. To my mind any dressing that can be easily applied that would ward off the attacks of the grubs in the case of choice Apples and Pears is something to be sought for, as it is no use advocating planting as a profitable commercial undertaking till a remedy is found in the direction I have indicated. Vegetables have been plentiful and good, rather slow coming in, but of good quality. The Potato disease is somewhat prevalent in this district; the first earlies, such as Ashleaf, First and Best, &c., escaped, but second earlies of the American Rose type fared badly, particularly in close well cultivated cottage gardens, and which to the cottagers will be a great loss, as with many of them the Rose varieties are favourites. With regard to outdoor flowers, hardy herbaceous plants have been the most effective, such as scarlet Gcums, Delphiniums, Stenactis, Poppies, Coreopses, &c., all of which have been most useful for cutting and decorative purposes.—R. Maher, *Yattendon Court.*

BUCKINGHAMSHIRE.

We have had more rain in June and July than in any other months of the present year—viz., June, 2·8 inches; July, 3·72 inches. This, combined with an extreme low day and night temperature, has been very suitable for recently planted trees and shrubs; as a rule very few have died, and most have made good growth. Here flowering and ornamental shrubs have done well although they have flowered late; this has not affected the plants in any way, as those that produce ornamental berries are now fruiting freely, and are objects of beauty and interest to all lovers of this class of shrubs. As instances, Sambucus racemosa in the shrubberies here are laden with scarlet berries. Hippophœa rhamnoides with its silvery leaves and yellow berries is very telling in masses. Pyrus Aucuparia, or Mountain Ash, is also fruiting freely, and is always a feature among shrubs and trees at this season of the year. Spiræa ariæfolia, callosa, bella, and alba have all been fine here. Rubus coronaria fl.-pl., albapl., and rubra fl-pl. are flowering freely on walls and fences. Rubus leucodermis, the yellow-fruited variety, should always have a place among this class of plants. Olearia Haasti is covered with white blossoms. China Roses have stood the cold and damp better than other varieties; planted in masses among shrubs they have a very pretty effect during the summer, being continuous bloomers. Hydrangea paniculata and Hypericum calycinum have flowered and grown well. Among climbing plants Clematis Jackmanni has flowered extra well and made more growth than usual, proving that this class of plants prefer plenty of moisture. Polygonum sachalinense is over 12 feet high, and is one mass of white flowers. Hyacinthus candicans is blooming well, and the rain seems to have been an advantage to this plant, as the flower spikes are stronger than last year, although the bulbs have not been disturbed for six years. Tuberous Begonias have stood the wet and cold summer well, and are our gayest summer bedders. Begonia ascotiensis has done well bedded out in masses. Abutilons have grown well, but have not flowered freely. Scarlet Pelargoniums have grown all to foliage.—J. Smith, *Mentmore Gardens.*

June and July have been very dull, cold, and wet, the thermometer often down to 39° and 40°, the nights very cold. Kitchen garden crops are good, early Potatoes, Cauliflowers, and Cabbage never better, and early Peas filled well. The later Peas have not filled well, they have grown beyond their average height, and some sorts have gone up 10 feet and overtopped the sticks. Kidney and Runner Beans are good and fruiting well. Late Potatoes promised well, but the disease is very prevalent amongst all sorts, and I fear will be rather serious for the cottagers. Fruit here is a very small crop, Apples, Pears, and Plums not half crops. Gooseberries, Currants, and Raspberries have been heavy crops, but very poor in flavour. Strawberries almost a failure, and deficient in flavour. Cherries not a heavy crop, but many were lost through the continuous rain. Peaches and Apricots were few outside. In the houses we have heavy crops; those in the early house fine and well coloured. The late trees have heavy crops, but will not swell well, as the borders have been too wet and cold. Late Grapes are also heavy crops, but I fear will not colour well.

Flower borders here are now beginning to look bright, but Pelargoniums have not thrown up many trusses until the last week; now they will soon look bright with flowers. Calceolarias have bloomed well, and Carnations also. The shrubs here suffered very much last season from the drought. Rhododendrons lost many of their leaves; we had but few flowers on them this year.—W. Mowbray, *Fulmer Gardens, Slough.*

CAMBRIDGESHIRE.

The summer has certainly been a remarkable one, but not, as many as well as myself at first supposed, on account of excessive rainfall. The records show that during the months of June and July we had only 0·27 inch of rain above the average, and that for the whole of the year to the end of July we had less than the average by 1·13 inch. The exceptional character of the summer has been due to the almost entire absence of sun, continuous low temperatures, and frequent rather than heavy falls of rain. Rain seemed almost constant for weeks, but towards the 21st of August, when half an inch was registered, some herbaceous plants were in distress for want of water. The consequence of this dull and rainy weather was most conspicuously evident in the unusual growth of grass and weeds, which were difficult to keep under. The hay crop here and in the neighbourhood has practically been a failure. Herbaceous plants and trees seem not to have recovered from the effects of last year's drought, for while annuals in many cases have grown with unusual vigour, permanent vegetation, on the contrary, speaking generally, has not grown so strongly as usual. The effects of last year's dryness are clearly seen in the amount of seed that some trees have borne, due no doubt to complete ripening of the wood. Some annuals that have lately been very fine are Waitzia aurea, a fine yellow Everlasting; Linum grandiflorum, Lavatera trimestris, and Statice Suwarowi, which, with its long spikes of pink flowers, has been particularly ornamental, and for a Statice remarkably graceful. Godetias have grown unusually tall. Some plants, as for instance Mignonette, have not grown so strongly as usual, evidently for want of sun. Fuchsias I have considered less effective than usual for want of the same influence. Yuccas, on the other hand, which might be expected to need sun, have flowered finely, probably from the effects of last year's insolation. Lastly, it may be of interest to mention that the average of Cambridge rainfall for the last twenty-three years is 21·47 inches.—R. Irwin Lynch, *Cambridge Botanic Gardens.*

DORSETSHIRE.

The rainfall has been largely in excess of the average for June and July here, and the temperature very low. Pelargoniums, Calceolarias, and other bedding plants have made plenty of growth, but are deficient of flowers. The Apple crop is very thin and the fruit small. Pears are a little better. Morello Cherries are fine. Plums are under the average. Strawberries and all bush fruits have been abundant but lack flavour. Vegetables have never done better. Winter crops are looking promising. Potatoes are extra good in quantity and quality. Ashleaf varieties are showing a little disease, Beauty of Hebron, White Elephant, and Magnum Bonum are fine, also Veitch's new Potato Chiswick Favourite.—D. Williams, *Canford Gardens, Wimborne.*

EAST LOTHIAN.

The weather during the whole of week to August 24th has been of the most depressing character. Heavy showers either during the night or day, and an uninterruptedly close muggy atmosphere. Vegetable Marrows decay on the ground, Peas are decaying or mildewed, Roses decay in the bud, and Pelargoniums with many other flowers are just as bad. Currants are damping. Moorpark Apricots almost to a fruit cracked and spotted, and late Strawberries quite useless.

Peaches and Nectarines ripening indoors have scarcely any flavour. As to Apples and Pears we can hardly hope for them now to be over a third of the weight they are in good seasons, and tender varieties of the former are badly spotted. Curiously enough Potatoes are of excellent quality, some Snowdrops we are using at present being beautifully floury and of fine flavour. There has been a somewhat curious lack of fungoid parasites this season. Roses are almost free from mildew. The orange fungus has also kept away. There is no Potato disease yet, and no Hollyhock disease. As to the lateness of the season, Lime trees are now flowering. French Beans have not been gathered from out of doors. Carnations are beginning to open their buds, and Peas are being gathered from four successive sowings, the fifth or earliest having been cleared off, not for want of Peas to gather, but because the ground was wanted.—R. P. BROTHERSTON, *Tyninghame*.

KENT.

PERHAPS the following observations of the weather during August, taken daily at nine o'clock, may be interesting to some of the readers of the Journal if you can find room to insert them. The total rainfall for the month was 3·20 inches, rain falling on eleven days, the greatest amount in one day (1·51 inch) on the 1st, 0·90 falling between 6.30 and 7.30 P.M. The temperature was highest (73°) on the 9th and 10th, the wind being S.W., and lowest (52°) on the 18th, the wind being N.E. On thirteen days the temperature was below 60°, and only on the 9th and 10th was it above 70°. The maximum shade temperature taken at three o'clock was above 70° on nine days only, the highest (80°) being on the 9th.—ROBERT FILKINS, *Tower Fields Gardens, Keston, Kent*.

LIMERICK.

WE keep no record of rainfall here, consequently I am unable to state the amount in inches. I am sure, however, that we have not had anything like the amount that has fallen on the other side of the Channel. The nights have been somewhat cold. On three nights in June the thermometer fell to 36°, one night to 40°, seven to 44°, eight to 46°, seven to 48°, the remaining nights ranging from 50° to 54°. The highest day temperature during the month was 88°, the lowest 62°. One night only in July the thermometer fell to 36°, the remainder of the month ranging from 42° to 50°. The highest day temperature registered was 86°, this was reached on several occasions, the remaining days ranging from 64° to 82°. Roses have been splendid and without a trace of mildew. With the exception of one border Pelargoniums have done well. Heliotropes and Calceolarias were stationary for some time, but are good now. Begonias are grand ; Violas are very good ; Asters, Stocks, Zinnias, Calliopsis, Marigolds, Petunias, Viscaria, Papaver umbrosum, Tagetes, Phlox Drummondi, Bartonia, and Godetias are very fine. Mignonette is bad, Verbenas moderate. Herbaceous plants of all kinds were never better than this year.

Cauliflowers have been good. Peas have cropped splendidly, particularly Laxton's Alpha, Harrison's Glory, and Telephone. French Beans came up badly, but have since done well ; the first dish was gathered in the open garden on August 6th. Runners were five days later. Onions and Beet are good ; Carrots well nigh a failure, owing to the maggot. Celery is good, though several plants in the earliest batch bolted. Winter greens of all kinds look sturdy and healthy, and not much eaten by caterpillars. Potatoes are badly diseased, both root and branch, and get worse daily. Strawberries, Gooseberries, Raspberries, and Currants were very abundant, and all saved dry. Only a few Pears are fruiting. The same may be said of Plums. Apples and Nuts are a heavy crop. Apricots are a failure. Cherries similar to Pears, some trees loaded, others very lightly cropped.—R. WELLER, *Glenstal Castle Gardens, Munroe, Co. Limerick*.

SHROPSHIRE.

THE total rainfall for the present year ending June 30th was 2·57 inches under the average for the corresponding period during the past six years ; but the heavy rainfall in July has made up the deficiency, the total rainfall amounting to 5·28 inches. Rain fell on twenty-seven days, and for the amount which fell in one month we have only one which exceeds 4 inches during the past six years, that one being the memorable wet May of 1886, when we registered 7·16 inches. In a general way fruit crops in this district are below the average, Apples, Pears, Plums, and Apricots being under the average. Peaches on open walls are an average crop, but so late that I am afraid they will not ripen. Cherries have been a good crop, especially Morellos, which are very fine. Strawberries and Raspberries were good average crops, but deficient in flavour. Black and Red Currants, and Gooseberries were over average crops. Quinces a failure. Walnuts, Filberts, and Cob Nuts are plentiful.

Vegetables. Early Potatoes have turned up a good crop. Late varieties are looking well, but in digging up some early Potatoes to-day, the 27th, we have found the first traces of disease. Roots in general are satisfactory. Onions a good crop, but small in size, and many with thick necks. Dwarf Kidney Beans have done badly. Scarlet Runners look fairly well, but are late. Early Peas a good crop. Second early varieties not so good. Late crops look promising. Cauliflowers have done badly.

Bedding-out plants have not been very satisfactory, Pelargoniums especially being short of flowers. Perennials have done fairly well, although those that were in flower in July were damaged by the heavy rains. Roses suffered very much from the same cause.—JOHN PENSON, *Willey Park Gardens, Broseley*.

AMERICAN SEEDSMEN AND HUMOUR.

TWENTY years ago you could plant a seed according to directions, and it would produce a plant which seemed to resemble in a general way the picture on the outside of the package. Now, under the fluctuating influences of irresponsible isotherms, phlegmatic springs, rare June weather and overdone weather in August, I find it almost impossible to produce a plant or vegetable which in any way resembles its portrait. Is it my fault or the fault of the climate ?

I first noticed the change in the summer of 1872, I think. I purchased a small package of early Scotch plaid curled Kale with a beautiful picture on the outside. It was as good a picture of Scotch Kale as I ever saw. I could imagine how gay and light-hearted it was the day it went up to the studio and had its picture taken for this purpose. A short editorial paragraph under the picture stated that I should plant in quick, rich soil, in rows 4 inches apart, to a depth of one inch, cover lightly, and then roll. I did so. No farmer of my years enjoys rolling any better than I do.

In a few weeks the Kale came up, but turned out to be a canard. I then waited two weeks more, and other forms of vegetation made their appearance. None of them were Kale. A small delegation of bugs which deal mostly with Kale came into the garden one day, looked at the picture on the discarded paper, then examined what had crawled out through the ground, and went away. I began to fear then that climatic influences had been at work on the seeds, but I had not fully given up all hope.

At first the plants seemed to waver and hesitate over whether they had better be wild Parsnips or Lima Beans. Then I concluded that they had decided to be foliage plants or Rhubarb. But they did not try to live up to their portraits. Pretty soon I discovered that they had no bugs which seemed to go with them, and then I knew they were weeds. Things that are good to eat always have bugs and worms, while tansy and castor oil go through life unmolested.

I ordered a new style of Gladiolus eight years ago of a man who had his portrait in the bow of his seed catalogue. If he succeeds no better in resembling his portrait than his Gladiolus did in resembling theirs, he must be a human Onion, whose presence may be easily detected at a great distance.

Last year I planted the seeds of a Water Melon which I bought of a New York seedsman, who writes war articles winters and sells garden seeds in the spring. The portrait of this Water Melon would tempt any man to climb a nine-rail fence in the dead of night and forget all else in order to drown his better nature and his nose in its cool bosom. People came for miles to look at the picture of this Melon, and went away with a pleasant taste in their mouths.

The plants were a little sluggish, though I planted them in hills far apart each way in a rich, warm loam, enriched by everything that could make a sincere Water Melon get up and hump itself. The Melons were to be very large indeed with a centre like a Rose. According to the picture these Melons generally grew so large and plenty that most everybody had to put sideboards on the garden fence to keep them from falling over into other farms and annoying people who had all the Melons they needed. I fought squash bugs, cut worms, Hessian flies, chinch bugs, curculio, mange, pip, drought, dropsy, caterpillars, and contumely till the latter part of August, when a friend from India came to visit me. I decided to cut a Water Melon in honour of his arrival. When the proper moment had arrived and the dinner had progressed to the point of fruit, the tropical depths of my garden gave up their season's wealth in the shape of a low-browed Citron about as large and succulent as a hot ball.

I have had other similar experiences, and I think we ought to do something about it if we can. I have planted the seed of the Morning Glory and the Moon Flower and dreamed at night that my home looked like a florist's advertisement, but when leafy June came a bunch of Norway Oats and a hill of corn were trying to climb the strings nailed up for the use of my non-resident Vines. I have planted with song and laughter the seeds of the ostensible Pansy and Carnation, only in tears to reap the Bachelor's Button and the glistening foliage of the Sorghum plant. I have planted in faith and a deep, warm soil, with pleasing hope in my heart, and a dark-red picture on the outside of the package, only to harvest the low, vulgar Jimson Weed and the night-blooming Bull Thistle.

Does the mean temperature or the average rainfall have anything to do with it ? If statistics are working these changes they ought to be stopped.—(*American Paper*.)

HORTICULTURAL SHOWS.

BRADING, ISLE OF WIGHT.

THE amateurs and cottagers, many of whom are allotment holders, were given an opportunity on Tuesday last, August 28th, of bringing out their productions and competing for prizes offered by the above Society. Horticultural industry seems to have taken a firm hold in the neighbourhood, and a few of the leading spirits determined that Brading should not be behind in encouraging the interest. Lady Oglander, the Lady of the Manor, from the ancient barony of Nunwell, kindly gave her support and offered her beautifully timbered park to hold the Show in. Like many others this year the opening day was marred by a perfect downpour of rain, but the second day proved fine, and enabled many visitors to visit the park and Exhibition. The affair was a decided

success, and Dr. Lucas, the Treasurer, Mr. Sims, the Hon. Sec., and the Committee generally were well encouraged by the results of the first Show.

Mr. Wilkens, gardener to W. S. Ridley, Esq.; Mr. A. Tolley, St. Helens; and Mr. R. Tolley, gardener to Lady Oglander, filled the centre stage of the marquee with stove and greenhouse flowering plants, which were a grand attraction. The stage around was filled with the various classes of stands and baskets of flowers, bouquets, fruits, and vegetables. The productions were very creditable; the baskets of flowers showed great taste in the arrangement, but some of the Potatoes were coarse. Prizes were awarded for the best kept and cropped allotment ground. G. R. Lucas, Esq., Mrs. Morris, Mr. J. W. Pain, Mr. Barham, Mr. G. Corbett, Mr. A. Bownin, and Mrs. Lucas were the principal contributors to the amateurs' division. The basket of cut flowers from the last named lady was much admired. Mr. Frank Cooper was first for a dish of black Grapes, showing some good Black Hamburghs, Mr. A. Tolley second, but for white Grapes the latter was first with good Muscat of Alexandria. The dish of Figs that gained the first prize, exhibited by Mrs. Hills of Adgestone, being as fine as we have ever seen. The heaviest Potatoes were a dish of The Daniels, second was White Elephants. Fidler's Prolific was first in the class for kidneys, and Radstock Beauty in the class for round Potatoes. The Rev. E. Summers and friends from the vicarage contributed some beautiful stands of cut flowers, and a model garden; Miss Hinxman a very attractive epergne of cut flowers, and Mrs. Senior some beautifully arranged baskets of flowers. Mr. Frank Cooper also exhibited a stand of six bunches of well finished Black Hamburgh Grapes.

An object of especial interest was a fine collection of vegetables exhibited, not for competition, by Mr. C. Orchard, bailiff to the Brading Harbour Company. There were twenty-five varieties arranged in the group, all of which were grown on the reclaimed land. The collection was considered one of the finest that had ever been exhibited in the island. Sutton's Masterpiece, Sutton's Abundance, and Sutton's Satisfaction Potatoes were particularly clean and good. Cannell's Come to Stay new Potato was much admired. Sutton's Early Gem and New Intermediate Carrot, Early London Cauliflower, Sutton's Satisfaction, Pride of the Market, and President Garfield Peas were also good; Beet-roots, Parsnips, and Onions being also in like proportions that quite astonished the natives that knew the sand and mud banks that were under the sea but a few years ago. Segt. Williams, Brading, also exhibited six dishes of vegetables, not for competition.

SHERBORNE.—August 29th.

This Society has been established twenty-seven years, and on the whole the annual exhibitions have been highly successful. Latterly, however, the fixtures have been rather unfortunate, and it was earnestly hoped that more favourable weather than usual would have been experienced, an extra large attendance of visitors being needed in order to bring up the funds somewhat. Unfortunately frequent very heavy showers much marred the proceedings, and in all probability another deficit resulted. The Show was held among the ruins of the old Sherborne Castle, a spot highly suitable both on account of its picturesqueness, and also for the shelter much needed for the various tents. An excellent display of plants, flowers, fruit, and vegetables was arranged, which reflected much credit on all concerned. Mr. G. F. Stokes has long and efficiently filled the post of Honorary Secretary, and a numerous Committee render him good assistance in various ways.

The principal prizes were offered for a collection of twelve ornamental plants in or out of flower, and with these Mr. T. Wilkins, gardener to T. M. Guest, Esq., Inwood House, was first, having capital specimens, and the second prize was awarded to Mr. J. Curry, gardener to Col. Pepper, Salisbury. For the best miscellaneous collection of stove and greenhouse plants Mr. Wilkins was again well first. Mr. G. Runnacles, gardener to C. Thurburn, Esq., Leweston House, was second with a group of smaller but very serviceable plants, Mr. T. Curry being a very close third. There were six entries with groups of plants arranged for effect in a half circle measuring 12 feet the longest way. These groups were all good and quite a feature in the Exhibition. Mr. G. Runnacles was awarded the premier prize, and certainly deserved it, his arrangement being very light and effective, all the plants used being of good quality, and no crowding was observable. The groundwork was formed principally of Maidenhair Fern, out of this springing a variety of highly coloured Crotons, Draceenas, Pandanuses, several elegant Palms, the flowering plants including Impatiens Hawkeri, and which was very attractive, Gloxinias, Begonias, and Gloriosa superba. Mr. W. G. Pragnell, gardener to J. D. W. Digby, Esq, Sherborne Castle, took the second prize with a neatly arranged group; Mr. J. Witherington, gardener to Major McAdam, being third, his group being very pleasing though slightly overdone with Lilium auratum; while the fourth prize fell to Mr. Wilkins, who also had a very creditable group somewhat disfigured by too much of the Panicum variegatum in front.

Ferns are always exceptionally good at Sherborne. With twelve varieties Mr. J. Crump, gardener to W. Neal, Esq., Kingsdon, was first, Mr. T. Wilkins was a good second. In the open class for Begonias Mr. G. H. Copp, gardener to W. E. S. Erle Drax, Esq., Holnest Park, was deservedly awarded the first prize, and he was also first for dwarf Cockscombs, the second prize in this instance going to Mr. G. R. Davey, gardener to R. Stainer, Esq., Mapperton House. The best six Fuchsias were staged by Mr. G. Gillingham, gardener to R. Phelps, Esq., Yeovil; the second prize going to Mr. C. Anthony, gardener to T. Moore, Esq., Yeovil, both having medium-sized, well-flowered plants. Mr. C. Anthony was first for Balsams, Mr. Copp being a good second, and Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, third. The best Zonal Pelargoniums were staged by Mr. J. Andrews, gardener to General Place, Thornford, Mr. C. Anthony taking the second prize.

Cut flowers were numerous, and in some instances the quality was good. Roses had been sadly battered by wind and rain the day previous, but in spite of this Mr. Campbell, gardener to Dr. Budd, Bath, succeeded in staging a very creditable stand of twelve triplets, and was first, the second prize going to Messrs. Keynes, Williams & Co., Salisbury. Mr. Campbell was also first for twelve single blooms, Mr. J. Burgess, Bristol, second. In the open class for twenty-four Dahlias Messrs. Keynes, Williams & Co. were easily first; Mr. J. Nation, Taunton, was second in this instance, and first in the class confined to amateurs, having several good blooms in each stand. Asters were remarkably well shown, the principal prizewinners being Mr. W. J. Jones, Bath; Mr. G. J. Garraway, Bath; and Mr. Copp. Mr. S. Tottle, Taunton, was first for Gladioli, and Mr. R. H. Poynter, Taunton, second. The best stand of twelve varieties of cut flowers was sent by Mr. Montagu Williams, the second prize going to Mr. R. H. Poynter. For a tastefully arranged basket of cut flowers Mr. C. H. Perkins, gardener to Col. Hambro, M.P. Melton Abbey, was first, and Mr. S. Kidley, gardener to H. A Hellyar, Esq., Coker Court, second. Mr. W. F. England, Chard, was awarded a first prize for an ornamental device, and with a vase of wild flowers Mrs. H. Baker, Sherborne, was first; Mr. W. Morres, Sherborne, second; and Miss Paynter, Sherborne, third. Mrs. Allan C. Dyer, Taunton, was first for a fine hand bouquet, Miss M. Poynter, Taunton, being second, and Mrs. Perkins, Milton Abbey, third.

One large tent was principally devoted to fruit and vegetables, and, as usual, a capital display of each was staged. There were five entries in the class for eight dishes of fruit, Pine Apple excluded, the first prize for which was a silver cup valued at five guineas. This was won by Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Hill House, Langport, who had fine bunches of Black Hamburgh and fairly good Muscat of Alexandria Grapes, a good Longleat Perfection Melon, Crimson Galande Peaches, Humboldt Nectarines, Florence Cherries, Moorpark Apricots, and Goliah Plums, all of good size and colour, this being altogether a highly creditable collection. Mr. W. G. Pragnell was at first awarded the second prize, but owing to having too many fruit in one dish had to be disqualified, and was awarded an extra prize. Mr. A. Crossman took the second prize for a good all-round collection only a few points below the preceding, and Mr. C. H. Perkins was third. Mr. Pragnell was first and Mr. J. Lloyd second with a Pine Apple. The last-named was placed first in the class for any variety of Melon, a capital fruit of Longleat Perfection, Mr. T. Wilkins being second with Hero of Lockinge beautifully ripened. There was less competition than usual in the Grape classes. Mr. W. J. Chalk, gardener to G. Read, Esq., Wilton, was first for three very fine well finished bunches of Black Hamburgh, Mr. G. R. Daley, gardener to R. Stainer, Esq., being a creditable second. Mr. Crossman was first for Muscat of Alexandria and Mr. Lloyd second, the first named having much the finest bunches. In the class for any other white variety Mr. W. Dennis, gardener to Lady Westminster, was first with fairly well finished Buckland Sweetwater, and Mr. Pragnell second with Foster's Seedling. In a corresponding class for black Grapes Mr. Wilkins received a second prize for Alnwick Seedling. A few good dishes of Peaches were shown, Mr. J. Lloyd being first with a good dish of Noblesse, the second prize going to Mr. G. R. Daley, who had Royal George in good condition. In the class for outdoor Peaches Mr. Pragnell was first for a well ripened dish of Hale's Early, Mr. W. C. Bowers, gardener to C. Holford, Esq., Castle Hill, being second with Desse Hâtive, not quite ripe. In the class for indoor Nectarines Mr. G. R. Daley staged a remarkably fine dish of Pitmaston Orange, and was first, the second prize going to Mr. C. H. Perkins for good Elruge. Mr. J. Gritton, gardener to Mrs. Moody, Stapleton House, was first for outdoor Nectarines, and Mr. C. H. Perkins second. The last named was first and Mr. Lloyd second with Pears, both having well ripened Jargonelle. The prizewinners with Plums were Messrs. J. Crump, W. Dennis, M. Paulley (gardener to A. W. B. Clarke, Esq.), S. Kidley, and J. Andrews, the varieties shown in good condition being Jefferson's, Kirke's, Greengage, and Washington. Morello Cherries were very fine. Mr. S. Kidley was first and Mr. J. Crump second, an extra prize being awarded to Mr. Lloyd for a good dish of Florence. Mr. Pragnell was most successful with Apples, and Mr. T. Evry, Bath, also took a first prize in these classes.

The Sherborne district has long been famous for the excellency of the vegetables produced in it, and shown in various parts of the country, Mr. W. J. Pragnell for many years being remarkably successful with them. This veteran is still capable of holding his own, but is pressed very closely by Messrs. Wilkins, Copp, and other gardeners in the neighbourhood, their various contributions forming a display not surpassed anywhere as far as quality and setting up is concerned. With twelve varieties Mr. Pragnell was placed first, his collection consisting of very fine Rousham Park Onions, Globe Artichokes, Autumn Giant Cauliflowers, Veitch's Matchless Carrots, Prodigy Peas, Wright's Grove White Celery, Snowball Turnips, Tender and True Cucumber, Giant White Runner Beans, Ellacomb's Improved Parsnips, Sutton's Satisfaction Potato, and Hackwood Park Tomato. Mr. G. H. Copp was a good second, and Mr. T. Wilkins a close third. With eight varieties Mr. M. Paulley took the lead, this collection consisting of Autumn Giant Cauliflower, Grove White Celery, Rousham Park Onion, Tender and True Cucumber, Matchless Carrots, No Plus Ultra Pea, Hathaway's

Excelsior Tomato, and International Kidney Potato, all in excellent condition. Mr. C. Bowers followed closely, and Mr. A. Philpott, gardener to W. Parson, Esq., Sherborne, was third. Mr. Copp was first for Celery, having very fine Grove White, and Mr. M. Paulley second. Mr. Pragnell was first and Mr. Wilkins second for spring-sown Onions, both have very fine bulbs of the White Spanish type. Mr. Lloyd was first for Tripolis, and Mr. Crossman second. Mr. Copp was first in the class for round Potatoes, staging a fine dish of Sutton's Satisfaction; Mr. Pragnell was second with Reading Russet. With kidneys, Mr. C. Bowers was first, and Mr. Gillingham second. Mr. Runnacles was well first for a brace of Cucumbers, staging Tender and True in good condition; Mr. G. Garraway, Bath, was second. Messrs. C. Bowers, Garraway, J. Harris, gardener to M. Williams, Esq., and J. Nation were also successful in the single dish classes. Several non-competitive displays of plants and cut flowers were made, which materially added to the attractiveness of the Exhibition. Messrs. R. Veitch & Co., Exeter, had a good bank of plants and stands of Carnations, Roses, Begonias, Gladioli, Asters, herbaceous plants, and Dahlias. Among the latter, King of the Cactus, Mrs. Hawkins, Picta formosissima, Zulu, Germania nova, and W. Pearce were the most attractive. Mr. Scott, Yeovil, also had a good variety of Roses, Dahlias, Begonias, and other cut flowers. A fine lot of Dahlias, including Pompon, single, fancy, and show varieties, were staged by Messrs. Keynes, Williams & Co., Salisbury. A stand of Amphion, Panthea, Pelican, Asia, Empress of India, Juarczi, Mrs. Tait, and Mrs. Hawkins, all classed as Cactus Dahlias, was most attractive. Messrs. Kelway & Son, Langport, arranged several fine stands of Gladioli, and also had a capital display of Gaillardias and other hardy flowers. From Mr. B. R. Davis, Yeovil, came several stands of Dahlias in variety, and a remarkably fine display of Tuberous Begonia blooms. These were arranged in bouquets, vases, and stands, and came in for a good share of attention. Among the varieties shown and principally raised by Mr. Davis, the best were Eucharis, a good single white; Gardenia, a fine double white; Picotee, Miss Hayward, T. Baines, Davis' Camellia-flowered; Ella L. Davis, National, Mauvette, Lord R. Churchill, Severn King, and J. E. Davis, all first-class doubles.

HARPENDEN.

The Harpenden Horticultural Society held the tenth annual Show on the 29th ult., in most unfavourable weather, and, to add to the difficulties, the hurricane that passed over the district on the previous night completely demolished one of the tents, and it was only by the active exertions of several of the Committee, who spent the greater part of the night on the show ground, that the large tent in which the open classes and gardeners' exhibits are staged was saved. However, in spite of the difficulties and disasters, from a purely horticultural point of view it was a great success, the entries being the largest the Society has ever received, in many cases the exhibits being better than those of former years. In the open classes we missed the grand flowering plants so successfully exhibited by Mr. Underwood, the gardener at High Firs, Harpenden. Owing to the death of this exhibitor's employer the Society has lost a firm supporter. In the plant classes Mr. Nutting, gardener to J. B. Maple, Esq., M.P., Childwickbury, St. Albans, was the most successful exhibitor, taking first in the class for six stove and greenhouse plants in bloom. Mr. Task, gardener to P. Bosanquet, Esq., Pondfield, Little Berhampstead, second. In the class for six foliage, Mr. Nutting first, Mr. Task second, and Mr. Emptage, gardener to T. S. Hill, Esq., Hawkswick, St. Albans, third. For six Ferns, Mr. Emptage was first, Mr. Nutting second, Mr. Pepper, Tewin Water, Welwyn, third. For a group arranged for effect Mr. Nutting was a good first with an exceedingly pretty arrangement; Mr. Emptage second with a more massive style, and Mr. Task third. Twelve table plants, Mr. Nutting first; Mr. Brown, Moat Mount, Mill Hill, second. Zonal Pelargoniums were well shown, the prizetakers being Mr. Sibley, Harpenden, Mr. Littlechild, Highfields, St. Albans, and R. Mather, Esq., Harpenden. Mr. Sibley and Mr. Smith, Harpenden, were successful with Begonias. Fuchsias and Coleuses were well shown. Herbaceous cut flowers were a feature of the Show, Mr. Henshaw staging a grand lot. The same exhibitor was also to the fore with Pompon Dahlias. Roses were grand, the honours going to Messrs. Paul and Son, Cheshunt, Rev. W. H. Jackson, Stagsden, and the Rev. F. H. Gall, Hitchin. Stove and greenhouse cut flowers were good, Mr. Brown staging an ideal collection.

In the fruit classes Mr. Brown was first for eight dishes, Mr. Nutting second, and Mr. Tilbury, Lamer Park, third. For black Grapes Mr. Brown was a good first, staging grand Black Hamburghs. In the class for white Grapes Mr. Nutting was first, showing bunches of Muscat of Alexandria. Mr. Nutting was also first for Peaches with a grand dish of Princess of Wales, the six fruits weighing 3 lbs. 2 ozs. In the vegetable classes Mr. Pepper was very successful, being first for a collection of nine varieties, and first for six varieties; Mr. Faint, Marden Hall, Hertford, being a close second. Mr. Pepper was also first for Carter's collection of vegetables. As is usual at Harpenden the amateurs and cottagers came out very strong, and made an exceedingly fine exhibit of vegetables, cut flowers, and plants.

The prizes for table decorations were not keenly contested, there being but two entries. Mrs. Sell, Luton, was first with a very pretty light arrangement; Miss Maple, a young lady of twelve years of age, followed very closely, the chief fault in her table being that it was rather too heavy. Bouquets, stands, wreaths, and buttonholes were well shown. Amongst the non-competing exhibits Messrs. W. Paul & Son certainly carried off the palm with a choice assortment of Roses, Dahlias, herbaceous flowers and foliage. In this exhibit was a very tasteful arrangement of Lapagerias which reflected great credit upon the designer. Messrs. Paul & Son, Cheshunt, also staged some fine Roses. Mr. Ware put up a magnificent assortment of herbaceous flowers; Messrs. Cutbush a choice collection of Roses; and Mr. Merrit, gardener to Lord Dacre, Kimpton Hoo, Welwyn, staged some fine Potatoes and six splendid bunches of Madresfield Court Grapes; Mr. Nutting had some handsome Palms 12 feet high, which greatly added to the general effect in the large tent; Mrs. Josling, St. Albans, sent some fine agricultural roots, and a group came from Sir J. B. Lawes, Rothampsted.

SANDY AND DISTRICT.

The twentieth annual Exhibition of this Society was held on Friday last in the grounds of Sandy Place, and probably no society established on similar lines and so conservatively conducted up to the very verge of its majority without courting extraneous attractions, has achieved such continued and increasing success and popularity, this favourite annual gathering having become not only the chief horticultural trysting ground for a large portion of the four counties of Beds, Hunts, Cambs, and Herts, but vieing in popularity as a general holiday for the district with the fête of St. Lubbock. The Show on Friday, which in addition to horticultural produce combined poultry, farm produce, bees, &c., was an all-round success, the one weak point perhaps being the limited and sparse display of fruit, which generally showed deficiency in quality and colour, owing to the unfavourable season.

In the open class for ten stove and greenhouse plants in flower there was good competition, Mr. Jas. Cypher of the Exotic Nurseries, Cheltenham, taking the lead with large and well flowered specimens, including grand plants of Bougainvillea glabra and Phœnocoma prolifera Barnesi, fine Ericas Irbyana, Thompsoni, and Marnockiana; Clerodendron Balfourianum, Statice profusa, Allamanda nobilis, and Ixoras Pilgrimi and Fraseri. Mr. W. Finch, gardener to J. Marriott, Esq., Coventry, was placed second with fully flowered and regular plants, all in fine condition, but somewhat smaller, his specimens of Dipladenia amabilis, Erica Aitoniana turgida, Allamanda nobilis, and Lapageria rosea commanding good attention. The third prize was secured by Mr. W. Rabbitt, gardener to General Pearson, C.B., The Hasells, Sandy, who staged some highly creditable and but slightly inferior plants; and Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eyuesbury, Hunts, was allotted deservedly the fourth place with smaller but healthy and well flowered specimens. For twelve Zonal Pelargoniums in the open class Mr. Redman was first, having well flowered plants of Hettie, President Thiers, Niphetos, Dr. Orton, Mrs. Wright, Le Cygne, and Henry Jacoby; Mr. Rabbitt following as second with bright coloured sorts, including Madame Titiens, Dr. Orton, Royalty, and Queen of the Belgians, all very good. Some good Ferns and plants were also shown in the amateurs' division, Mr. G. Claydon, gardener to J. H. Astell, Esq., Woodbury Hall, Hunts, taking first place for Ferns. Fuchsias from Mr. Rabbitt and Coleus from the same exhibitor were especially noticeable.

Cut flowers were very largely shown. For forty-eight Roses in the open class, not less than twenty-four varieties, Messrs. J. & W. H. Burch of Peterborough had the best stand, their flowers being very bright and clean, that good old Rose Duchesse de Morny, with Star of Waltham, The Bride, Comtesse de Serenye, Alphonse Soupert, Horace Vernet, Lady Sheffield, and Emile Hausberg being amongst their best. Messrs. Paul and Son, Old Nurseries, Cheshunt, were a good second, showing Victor Hugo, Mrs. John Laing, Madame I. Pereire, Mrs. Geo. Dickson, and Countess of Oxford in good form; Messrs. Burrell & Co., Howe House Nurseries, Cambridge, being third, Horace Vernet and Catherine Mermet being noticeable.

For twenty-four Roses open to amateurs, not less than twenty-four varieties, Mr. C. Lindsell, Hitchin, was first with a creditable stand of autumn blossoms, which included two fine flowers of Mrs. John Laing, a promising autumn Rose; Merveille de Lyon, A. K. Williams, Catherine Mermet, Marie Verdier, Horace Vernet, and Duke of Connaught being also good, Mr. P. Meyer, Orwell taking second place. In the open class for twenty-four spikes of Gladiolus, Messrs. Burrell & Co. had a very fine stand, chiefly their own seedlings, in the raising of which they bid fair to eclipse some of the great continental growers. Nobilis, a large well-formed flower, carmine rose coloured with white lines, and a splendid spike, will probably take first rank amongst English raised varieties. Dorothy, another fine seedling, colour salmon rose with white throat and blotches, was also striking. Vivid, Memnon, Shakespeare, Irene, and Matador were also good amongst the older varieties. Messrs. Burrell were awarded first honours for this stand.

Dahlias for the season were fairly well shown, the veteran Mr. H. Glasscock, of Bishop's Stortford, although strongly armed, had to succumb to a slightly superior stand from Messrs. Heath & Son, Cheltenham, who were placed first for twenty-four blooms, Mr. Gladstone, Mrs. Dodd, and Eclipse being amongst their best blooms, Mrs. Theobald and Mrs. G. Rawlings being noticeable also in Mr. Glasscock's box. Mr. Glasscock was placed first for six fancies in the amateurs' class with some good blooms, and Mr. P. Meyer second. For twelve Dahlias in the same class, Mr. Joseph Arnold, of Leighton Buzzard, showed some very fine blooms, and secured first place. Asters, with the exception of a remarkably fine stand of "The Comet" (Haage and Schmidt, 1887), a very striking and distinctly white-striped rose flower like a large reflexed Chrysanthemum, and to which a first-class certificate was awarded, were not remarkable. The best twelve Truffaut's coming from Mr. W. Bourne, Cambridge, the same exhibitor also leading with fine African Marigolds and a good stand of hardy cut flowers.

A well set up display of flowers, chiefly consisting of bouquet and

single Dahlias, was also set up by Mr. T. S. Ware of Hale Farm Nurseries, Tottenham, not for competition. There was good competition in the class for table decorations, Miss C. S. Orlebar of Willington Rectory, Beds, taking the first prize for a very effective but somewhat conspicuous display, consisting mainly of the scarlet Tacsonia, white flowers and Ferns; Miss E. C. Pearson of The Hasells, Sandy, for second prize, having a tasteful display, in which Clematis vitalba and Ferns, lightened up with Dahlia Juarezi, were the chief features. Third, Miss M. A. Mould, Ickwell House, Biggleswade, who had also a light and pretty table. Natural dried flowers in nicely arranged cases were also exhibited by Mr. H. F. Southam of Lyndhurst, New Brighton, not for competition.

FRUIT.—In this department Mr. G. Allis, gardener to Major Shuttleworth, Old Warden Park, Biggleswade, well sustained his position as a successful competitor at this Exhibition, securing first honours for eight varieties, showing fine Buckland Sweetwater and Lady Downe's Grapes, Melon, Peaches, Nectarines, Plums, Cherries, and Cox's Orange Pippin Apples of 1887 growth in fine condition; Mr. R. Carter, gardener to Col. Duncombe, Waresley Park, Hunts, taking second place. For six varieties Mr. Redman was first, and Mr. C. Forbes, Trumpington, Cambs, second. For two bunches of Black Hamburgh Grapes Mr. F. Faint, Hertford, was first, and Mr. Forbes second. For two bunches of black Grapes, Black Hamburghs excluded, Mr. Forbes was first and Mr. Allis second. For two bunches of Muscats Mr. Carter was first and Mr. Forbes second; and for two bunches of white Grapes, Muscats excluded, Mr. Allis was first with very fine Buckland Sweetwater, and Mr. Carter second with Mrs. Pearson. For scarlet-fleshed Melon Mr. Allis was first, and for green-fleshed Mr. Claydon; Mr. Dale, gardener to M. Foster, Esq., Sandy Place, taking first for a fine dish of Negro Largo Figs.

Vegetables were shown in enormous quantity, and for the collection of twelve varieties there was a very strong and close competition, Mr. G. Robinson, gardener to F. Howard, Esq., Abbey Close, Bedford, securing first place, Mr. Faint coming second, and Mr. A. Burgess, The Gardens, Wimpole, Cambs, third. For six varieties in the amateurs' class Mr. S. Rorby, Rennold, Beds, was to the fore, Mr. Allis second, and the Rev. W. E. Jackson, Stotfold, third. For twelve white kidney Potatoes Mr. R. Waller, gardener to Jas. Howard, Esq., Clapham Park, Beds, was first with a very fine dish of Vicar of Croxall, a promising looking variety. Mr. Waller was also first for twelve coloured kidney Potatoes. For twelve round whites Mr. Faint came first, Mr. Robinson leading in the class for twelve coloured rounds. Peas were fairly well shown for the season, the leading varieties being Duke of Albany, Evolution, and Ne Plus Ultra. For a collection of Potatoes Mr. F. Hazell, Cambridge, had a fine box; Mr. G. Robinson, and Mr. W. Raynes, Arrington, Cambs, competing very closely for second and third places. A collection of eighteen promising seedlings were also shown by Mr. A. Harris of Woburn, chiefly from seed sown in 1886 and 1887; coloured sorts, however, were predominant.

The silver medal offered by Messrs. W. Wood & Son for the best dish of fruit in the Show grown with their manure was awarded to Mr. W. Finch, Coventry, for three very fine specimens of a Melon named Finch's Seedling.



FRUIT FORCING.

VINES.—*Earliest Forced.*—Those that are to afford ripe Grapes in late April or early May should be pruned at once. It is not necessary to wait till all the leaves have fallen before pruning, only the wood must be brown and hard and the leaves turning yellow. The pruning will cause the Vines to rest more quickly and thoroughly. In pruning judgment is necessary, each Vine being pruned according to experience of its doings in the past. If it bear fruit freely when pruned to one or two buds, the bunches being as large as desired, and the Vine shows no tendency to weakness, then by all means keep to the system that is found to answer; but if the Vines, or any of them, from continuous early forcing, full cropping, or other cause show a tendency to weakness, the fruit being fewer and smaller, one or both, leaving the shoots a bud or two longer than usual will mostly result in a more certain show of fruit in large bunches, and when larger bunches than ordinary are wanted buds that are fully developed on the stoutest parts must be selected for pruning to. By pruning to two buds the serviceable bunch of a pound or a little more may be had on healthy Vines, but in some cases this close pruning does not result in fruit of that size, and in some instances none; therefore the pruning must be regulated according to the condition of the Vines and the size of bunch that is required. There is an evil in pruning less closely than usual, which is apt to be overlooked—viz,, allowing the Vines to carry quite as many bunches of 2 lbs. weight as they by the closer pruning did of bunches weighing a pound.

Thoroughly cleanse the house and the Vines also. Any weakly Vines or those in an unsatisfactory state may be improved by removing the soil down to the roots and supplying fresh turfy loam with an admixture of a tenth of clay marl if the soil be light, or of old mortar rubbish if heavy, and a twentieth part of steamed crushed bones, lifting any roots available for the purpose, laying them out upon the fresh compost, and covering them not deeper than 3 or 4 inches. This is best done before the fall of the leaf. It is a mistake to allow Vines when at rest to become very dry at the roots; comparative dryness is desirable, yet great injury is caused by allowing the soil to become dust dry. The outside border should have a covering to protect the roots from the heavy autumn rains, which reduce the temperature considerably. Glass lights are every way preferable, throwing off heavy rains and allowing the sun's heat to penetrate the soil. Many, however, are obliged to be content with a covering of leaves, bracken, or litter after the weather sets in cold, and though convinced that good Grapes can be produced without material to throw off the wet, rains, and snow, yet reason and practice justify their employment wherever available for the exclusion of moisture in undue proportion to the requirements of the Vines.

Pot Vines.—It is highly prejudicial to allow these to become very dry at the roots when at rest, especially those for starting in November. They should have moisture to keep the roots fresh, those for that purpose—*i.e.*, early fruiting, being now completely at rest, the wood thoroughly ripe, the laterals cut close home, and the canes shortened to about 6 feet, more or less according to the situation of the plump eyes. Whilst the cuts are dry dress them with styptic or "knotting" to prevent further trouble from bleeding. They should be kept in a cool airy house. Place later Vines in pots outdoors to ripen or harden. The south side of a wall or fence is suitable, the roots being protected from heavy rains, supplying sufficient water only to prevent the destruction of the root fibres.

Late Grapes.—The weather in most places has been extremely unfavourable for the ripening of late Grapes, the borders being saturated with moisture outside, resulting in an undue amount of lateral growth and the swelling of the berries to an unusual size. Keep the laterals well thinned, and thereby admit as much light as possible to insure the finishing of the crop, not by large reductions of foliage at one time, but by frequent pinchings. Where spare lights are at hand employ them to throw off heavy rains and to secure greater warmth to the soil. This will not only assist the present crop to ripen—to finish satisfactorily—but will help to secure the ripening of the wood. Fires will be necessary to maintain a night temperature of 70° to 75°, falling 5° or even 10° through the night, but getting up the temperature early in the morning to 70° or 75° with a little ventilation, at which keep through the day artificially with an advance to 80°, 85°, or even 90° from sun heat, affording Muscats and others that require a high temperature to finish off well a temperature of 80° to 85° by day under any circumstances, and 70° to 75° at night, accompanied with a free circulation of air day and night, as it will require sharp firing to finish off late Grapes before the days are too short to admit of its continuance; indeed, more may be done in the next few weeks than the remainder of the year. Those Grapes well advanced in ripening may have the atmospheric moisture gradually reduced; those only colouring should have a moderate amount of moisture to assist their swelling, not neglecting the inside borders, as may be necessary to insure an efficiency of moisture.

Young Vines, especially those that have made a strong growth, are late in ripening, and must be assisted with fire heat, maintaining a minimum of 65° and maximum of 75° from fire heat, continuing it until the wood is ripe, accompanied with free top and front ventilation. The laterals must be gradually cut back, being careful, however, not to do it so as to cause the principal buds to start into growth. Do not allow the laterals on any account to interfere with the principal leaves, which must have direct light and air in order to the perfecting of the buds at their base.

THE FLOWER GARDEN.

Zonal Pelargoniums.—Cuttings of these are very soft and sappy, and more than ordinary pains must be taken or they will fail to strike. They ought to be at once taken off the old plants, duly cut to a joint and trimmed, and then laid in a dry frame or house till such time as the wounds are thoroughly dried. If this old fashioned plan is not adopted, the least that can be done is to use rather dry soil for the pots and boxes, and give no water for a week or more. In any case only enough water should be given to prevent shrivelling, as if the soil about sappy late-struck cuttings is saturated with moisture at any time they are liable to "damp off." Whether they shall be struck and wintered in pots or boxes must depend upon circumstances. Where large numbers are required, these being stored in well ventilated houses or dry heated pits, shallow boxes with plenty of drainage are preferable, especially for the green-foliaged varieties. Where, however, the plants have to be wintered in rather damp pits, frames, or various makeshift positions, fewer will be lost if pots are used. These may be from 4-inch to 8-inch in size, and should be well drained and firmly filled with gritty soil, the cuttings being dibbled in rather thickly. Pots are decidedly to be preferred for all the delicate bronze, silver, and golden variegated varieties. None should be left in the open in showery weather, but all ought to be set either in frames or pits, and plenty of light and air admitted to them. The aim should be to encourage a strong root action accompanied with little or no top growth.

Tuberous Begonias.—When cuttings of these can be procured they may be struck very much in the same manner as Pelargoniums. It is too late to insert them in the open ground or at the foot of sunny walls and frames; pits or frames are the best positions for propagating them now. Placed in heat or closed frames they will nearly all damp off. Enough water should be given to prevent the soil becoming very dry or the cuttings flagging badly, but it ought to be gradually with-

held after a tiny tuber has been formed and the top has commenced to die down. Late-raised seedlings which are not large enough to plant out will form small bulbs before the tops die down, and if these are kept in a cool house, pit, or dry shed they will be available for bedding out next season. On the whole Begonias have done well this season, and are far more effective than Zonal Pelargoniums.

Verbenas.—A showery summer suits Verbenas much better than hot and dry weather, and plenty of clean healthy young cuttings are available in most instances. The best for striking are the young flowerless shoots that spring from the centre of the plant, and these root readily in gentle heat. They should be made into short cuttings, at once, dibbled thinly in well drained 5-inch pots filled with light loamy soil faced with sand, and then placed in a frame set on a gentle hotbed. The soil ought not to be kept very dry at any time, either before or after the cuttings are rooted ; a little shade should be given in bright weather, and a small amount of air on the least signs of damping off. When well established the plants are best kept in cool frames, pits, or greenhouses, where they will remain cleaner and healthier than if wintered among a variety of other plants in heated houses. They will stand a little frost better than much fire heat.

Heliotropes.—These have done surprisingly well this season, and ought to become more popular than ever for bedding out purposes. If stock plants are needed it is advisable to make a number of young shoots into cuttings, and strike these much as advised in the case of Verbenas. They are not nearly so hardy as Verbenas, and can rarely be wintered in cold frames or pits, but can be kept on the shelf of a well heated greenhouse. The surest way of securing plenty of strong cuttings in the spring is to grow a number of plants in 5-inch or 6-inch pots, these flowering in the autumn in a greenhouse, or nearly up to midwinter in gentle heat. After being rested for a time they may be restarted in a forcing house, and will soon produce abundance of cuttings.

Ageratums.—Much that has been advanced concerning the Heliotropes also applies to Ageratums. The latter, however, do not produce cuttings so freely at any time, being much the most floriferous. Soft flowerless tops, if these can be procured, soon strike root in gentle heat, and the plants thus obtained should be potted off singly and kept steadily growing throughout the winter. A few old plants kept in pots sometimes do good service, and a few that are not so profusely flowered as the rest may be lifted from the ground later on. A stock of plants may be most easily raised from seed, but these are not of such good habit as those struck from cuttings.

Lobelias.—Seedlings of these have done better than plants raised from cuttings or by dividing old plants, the latter being of the most dense habit, and therefore the first to damp off in very wet weather. Seedlings, though very much better as regards habit of growth and freedom of flowering than they used to be, do not equal struck plants of named varieties. The surest method of obtaining plenty of cuttings in the autumn is to put out a few plants each season in the kitchen garden, and these not being allowed to flower are certain to produce plenty of strong tops which strike readily in gentle heat. A considerable number of cuttings may also be obtained from the flowering plants this season, and these may be struck and treated in every respect similarly to Verbenas. Seedlings are more easily raised now than in the spring, when so many other matters require attention. Seed should be sown thinly on the surface of pans filled with fine sandy soil, this being moistened prior to sowing the seed. Set the pans in a cold frame, pit or handlights, cover closely with squares of glass, and shade from bright sunshine. The soil whenever at all dry should be carefully moistened, preferably by immersion in a tub of water, and the seedlings will require plenty of air to prevent their damping off. In this manner a capital lot of seedlings will be available for pricking out next spring, and which will require no heat to keep them growing strongly.

Various.—Alyssum or Koniga maritima cuttings may be struck in gentle heat, and if need be Fuchsias, Iresines, Alternantheras, and Coleuses may also be struck now for stock purposes. Shrubby Calceolarias, Violas, and Gazanias need not be attended to till October, late-struck cuttings being the most easily wintered.

KITCHEN GARDEN.

Lettuces and Endive for Winter.—Where salads are valued in winter Lettuces and Endive must always form an important part of them, and attention should be given to them before the season is too far advanced. Some varieties of Lettuces will grow a little throughout the winter, but so little that it would never do to trust to small plants coming on during that season, and they should be a good size before November. Indeed, we have had them almost full sized by that time, and kept them on all the winter. From the seed advised to be sown some time ago the plants will now be several inches high, and now is the time to take them in hand. Do not draw them all up from the seed bed, but merely thin them and allow a crop to remain. These will gain maturity before those that are transplanted, but the thinnings should all be planted elsewhere, and they should be planted in two or three places. If some of them are placed along the bottom of a wall or hedge where they can have a little shelter they will do well. Plant others on a sunny south border, some in open frames, or in positions where frames can be placed over them, as, let the weather be what it may, there will then always be a supply of Lettuces and Endive. Do not pamper them at first, as the more robustly they can be grown now and during the next two months the better will they be able to bear severe weather. Plant about one foot apart each way, and only in moderately rich soil, as sturdy growth is of more importance than having huge heads before the severe weather or short days set in.

Planting Savoys.—It is now late to plant winter Greens, but Savoys of the Tom Thumb type may still be planted to be of service in winter. We have now some vacant quarters in the garden, and Savoys are being largely planted, as we do not approve of unoccupied ground in kitchen gardens at any time, and these Savoys will be valuable by Christmas and long after that time.

Leeks for Spring.—Very often Leeks for spring are planted too early. When half or nearly full grown now they will have lost much of their value by March, and it is generally at that time that they are in demand. After a severe winter they are most welcome in the months of March and April, and we advise all, especially small garden owners, to plant extensively now for the demands at that season. Open drills about 4 inches deep and 15 inches apart, and plant in these at a distance of 10 inches. Throughout the winter the soil on the sides of the drills will fall back, and this will blanch the stems sufficiently to make them acceptable.

Tomatoes in the Open Air.—We have frequently advocated the cultivation of Tomatoes in the open air, and those who have followed our advice for the first time this year may feel disappointed, as this is without exception the worst season for open-air Tomatoes we ever knew. It is an exception, not the rule. The plants have refused to grow as they ought, and as for the fruit it is scarce, poor, and almost a failure. The only ripe fruit we have had in the open air during August was from plants plunged in pots and trained up a south wall. What September may do for others we cannot tell, but we have ceased to depend on the weather this season, and surplus lights from the frames are now being placed over the plants growing against the walls. These will draw the heat, keep the rain from them, and place them so much on the same footing as the plants under glass that we hope ripe fruits may be secured by October. Some such assistance as this is the only way of securing open-air Tomatoes this season, and no time should be lost in affording them protection. Do not stimulate them to make superfluous growth ; be satisfied with small fruits, and keep them quite clear of the shade of the leaves. Of late we have been gathering many fine Tomatoes from plants under glass that have not been allowed to carry half so much foliage as is generally seen on Tomatoes. Shade does not agree with them in any position.

Late Peas.—Like many others our late Peas always suffer from the depredations of birds, particularly sparrows. They destroy the pods almost as fast as they fill. There is no use in trying to frighten the birds, but if the crops can be netted they will be safe. Indeed, this is the only mode of preserving them, and we advise all late Peas to be netted as soon as possible. If the nets can be placed on when the plants are in flower so much the better, as we have known the pods to be injured before there was any Peas in them, and very late Peas are so valuable that all attention possible should be given them.

Autumn Weeds.—Many things have failed to come to the highest maturity this season, but weeds are not amongst these, as they have grown enormously and in multitudes. In fact it is a "weedy year," and as "one year's seed" undoubtedly produces "nine years' weed," efforts should be made during September to root them up and clear them away. If the weather is dry this may be done by hoeing and raking ; if wet, hand-weeding must be resorted to. Some may think so long as they can see the crops fairly above the weeds that no harm is being done, but this is a mistake, and a weedy garden, in winter especially, is no credit to its owner.

Material for Mushroom Beds.—Collect all the horse droppings that can be procured and spread them under cover to dry previous to making up the Mushroom beds. Only the longest straw should be shaken out, and the heap may be turned over every other day to allow the superfluous moisture to escape.

PLANT HOUSES.

Abutilons.—Strong cuttings of soft wood may now be inserted singly in small pots ; these will root quickly in the propagating frame if kept close and shaded from the sun. As soon as they are rooted expose them gradually to full sunshine, and grow them in an intermediate temperature. When the small pots are full of roots place them into 4 and 5-inch. The compost, consisting of loam, sand, and one-seventh of decayed manure, should be pressed firmly into the pots to prevent the plants making a soft rapid growth, and if properly treated should not be above 9 inches or 1 foot high by the time they commence flowering, and are ready for the stove or any other moderately warm structure in which they may be required. When once good plants are produced they must have sufficient warmth to keep them growing slowly or they quickly cease flowering.

Bouvardias.—Where these have been planted outside and are intended for pots, lifting and repotting now need attention. Lift the plants with good balls of roots, and all the loose soil carefully worked from amongst them, so that they may be placed into pots of a convenient size. When grown on this principle it is often necessary to use larger pots than when they are confined to pots the whole season. After potting place the plants in a shady position, water liberally, and syringe freely until they become established. The past season has been of the worst possible description to ripen the wood, which is important if they are to flower freely. When the wood is only half-ripened trusses are frequently only produced at the ends of the shoots, and even then they are small. When well ripened they break freely after the removal of the terminal truss and flower on short growths from every joint. When

the plants are established place them under glass and gradually expose them. When the plants are intended to occupy side or central beds in houses lift and place them moderately close together on the border, filling in between them with loam and leaf soil, one third of the latter may be used. Give a good watering, and apply light shade for a few days until the plants will bear exposure to the sun without flagging. Encourage young plants in 4 and 5-inch pots from cuttings to complete their growth. Give them an application of artificial manure to the surface of the soil. Clear soot water will do them good and insure the foliage preserving a dark green instead of a light sickly hue.

Solanums.—Those planted out have not set well, only a very limited number having berries sufficient to render them of decorative value. Those kept under glass or confined at their roots in pots have done well in spite of the weather, but they are in a backward condition. Those from the outside may be placed under glass to bring them forward more rapidly. Supply water liberally, giving clear soot water and stimulants to keep their foliage green and healthy. Once they are allowed to suffer by the want of water or from exhaustion the foliage will soon turn yellow. In this condition Solanums are worthless for ornamental purposes. Well berried plants are highly ornamental when their foliage is of the darkest hue, and this can be attained by liberal supplies of water and judicious feeding.

Lilium lancifolium.—This Lily is very liable to be attacked by aphides when grown in pots for flowering indoors. The foliage should be kept clean by slight fumigations. After they have flowered the plants must not be neglected, or disappointment another year will follow. When placed outside the soil is liable to become too wet, and serious injury is the result. Place them in a cool airy position, and supply water carefully until the stems die naturally. The varieties of L. lancifolium do remarkably well in pots under good culture; they increase rapidly and attain great strength.

Chinese Primulas.—Admit abundance of air at night when the weather allows as well as by day. Protect them from bright sunshine, but be careful not to overshade them. If drawn up weakly by overshading or too close an atmosphere, they will not flower half so profusely as dwarf sturdy plants, and in addition they are liable to go off during the damp dull days of autumn and winter. The earliest plants may have clear soot water, and may be allowed to come into flower if they are needed for the conservatory early in October. If not, remove the flower truss directly it is visible. Pot later plants as they need it. Those for late spring flowering should be placed into 3-inch pots.

Pinks.—The old common garden variety is very useful for forcing in 4 and 5-inch pots. Insert thickly well-developed cuttings. Water and place them in a cold frame, and nearly every one will root if shaded from the sun for two or three weeks. Year-old plants may be lifted from the open borders and potted, while good bunches may be placed together in boxes for forcing when the flowers are needed only in a cut state. They must be established before winter sets in.

THE BEE-KEEPER.

PREPARING FOR WINTER.

Those bee-keepers who have acted on the instructions given at different times will find that their stocks are now in a proper condition for going into winter quarters, and that in the spring the result will be favourable. But there are some bee-keepers who have not paid proper attention to the various requirements of their stocks, and to these we earnestly appeal, in their own interests, to do what must be done as quickly as it may be done. This has been a phenomenal year, and as a consequence uncared-for stocks are in a precarious state, so much so, that unless great care is taken at the present time, a greatly increased winter mortality will be the inevitable result. It is not our intention to attempt, by frightening lazy bee-keepers by holding up before them a picture of future loss, to induce them to take the proper steps for remedying former neglect, because we have no pity for bee-keepers who are enthusiastic in good seasons, and indolent procrastinators when their lot falls in a bad time; but it is a duty owing to those who err from want of thought or ignorance, to impress upon them the necessity for at once overhauling and attending to all stocks which are expected to live over the next six months and prosper.

It is said sometimes that stocks may be put into quarters too strong in numbers, and this may sometimes be the case. Over-population means a greater consumption of honey, and every ounce consumed by what we may term the surplus bees is a loss to the bee-keeper. But even here we may think with reason that the larger the population the less amount of food need be consumed in order to produce the necessary amount of heat; but it is not necessary to pursue this line of argument further, because we find that in practice not one stock in a hundred has anything approaching to a surplus population at the end of September. On the other hand, very many stocks are undoubtedly most disastrously reduced at that period, and unless there is an augmentation in numbers, such stocks will not give the results that should be obtained from every stock in a good season. There are exceptions, but these prove the rule.

Driven bees may now be purchased at a low rate, in fact "A Lanarkshire Bee-keeper" informs us that they are a drug in the market. Here, then, is a chance for the bee-keeper who has weak stocks. Such a one should purchase driven bees sufficient to bring up the population of each of his stocks to a proper strength, and in making the purchase he may bear in mind that at the end of September a pound of bees will contain far more young, and consequently valuable bees, than will the same quantity bought at the present time.

No contraction of hives can be allowed. All surplus cases may of course be removed, but the brood nest should in no case be contracted at all; indeed stocks winter remarkably well with a case of empty combs left over the brood nest all through the winter, and the mortality in such stocks was last winter comparatively small. If stocks are strengthened by the addition of driven bees and fed up to contain some 25 lbs. of sealed food they may be wintered successfully on many principles provided that they are kept dry. Great heat is not essential to successful wintering, dryness is; warm coverings are useful, but it is no advantage to wrap up a stock until it resembles an old lady afflicted with rheumatism. We suspect that winter flights on unsuitable occasions are often caused by too much coddling in the covering arrangements, the temperature rising to a great height when the sun shines on the exterior of the hive, and the covering on the top preventing the heat from escaping raising the temperature, thus making the bees uneasy and ready to fly on days when it is dangerous for them to stir from home.

A single thickness of ticking and one pad of felt surmounted by a case containing some 4 inches of cork dust is a cheap, simple, and effectual covering for a stock; damp can then escape, and yet sufficient heat is retained to preserve the stock in a normal state. Entrances need not be very much contracted, and must never be closed except when snow is on the ground, and then only by strips of perforated zinc; and even then a board should be placed in front of the hive to prevent the sun shining in at the entrance, and thus by arousing the bees causes them to find out that they are unable to escape, with the result that a tumult may ensue with disastrous results. Some bee-keepers are, we are aware, antagonistic to thus closing the entrance, but we have never had any bad results when the above plan has been followed, while when the hive front has been shaded, but the entrances have not been stopped, considerable loss has in certain instances been the result. Hives should be well examined, and all cracks and fissures efficiently stopped by working in putty and afterwards giving a coat of good thick paint. Weeds should be cut down low, the legs of the hives examined, and everything which seems at all deficient be put in good condition, and then the bee-keeper may rest happy in the assurance that he has done all that it is in his power to do to ensure success, and that if failure does by any chance result it will by some untoward circumstances rather than by the neglect of proper precautions.—Felix.

NOTES ON BEES.

I write near the end of August, but beyond the rise of the temperature there is no improvement in the weather so far as bees are concerned. Ten days or so more, and according to precedent, the honey season will be past for another year, and all hopes of a surplus of honey gone unless the weather greatly improves, and

that immediately. That the bees have improved their time and bettered their condition since they were set down there is no doubt, but much still requires to be obtained before the bee-keeper will be remunerated for outlay this year. Bad as this is, it is worse for the fruit and farm dependants, whose crops are in many instances either totally destroyed or much spoiled, and in others for the want of sunshine now will also be of little value to the country. It has been a year without a summer.

Queen-rearing has been almost a total failure this year. June-bred queens are still unfertilised, and later bred ones appear to share the same fate. The absence of fine days has prevented the queens flying, and very few drones remain alive. Even queen-rearing hives and those queenless or having unfertilised queens have killed them even when well fed. Never have we witnessed such an abnormal state of matters. It is now five months since I sowed Sweet Peas, and three blooms have only as yet appeared. A spike of Wallflower having about twenty-four blooms took three months to expand twenty florets.

Matters are gloomy in the extreme for both agriculturists and bee-keepers for another year—soured and weedy ground for the one, while the other has either to purchase young queens or to keep old ones, which do not give satisfaction. To manage the latter properly for another year is in the first place to prepare for winter as early as possible without encouraging breeding in any way and to have as many bees as possible. In the second place the bees must be kept steadily breeding, no falling back when once begun; and when full of bees swarm artificially if they do not incline to do so naturally. Wherever an aged queen is about to be superseded by a young one, if she does not leave the hive voluntarily or with a swarm she will be killed. Thus the hive, with all its population, may be entirely lost to the bee-keeper through an accident to the young queen; whereas with a swarm off it is always valuable (if the weather is fine), then a second swarm and the old stock there are two chances of both doing well, and if fertilised in due course will in six weeks be as strong as any hive need be. If a nucleus be formed and the queen mate it may take the place of the old queen of the prime swarm. Thus three good hives will be had, where otherwise there might have been none, and for those who have an extended season the system is the best to pursue.

My strongest hives at the Heather are early swarmed old stocks, or those I joined young fertilised imported Carniolian queens to. I may here state that these imported queens display great mildness of temper, being their usual habit, very unlike those I had from an English dealer, who supplied me with queens as Benton's, but who never had queens from him. The bees of this race are vicious, and the drones are in some instances yellow, proving that they are crosses (probably with Syrians), then bred back to a colour approaching the true type of Carniolians.

THE BEST HIVE IN CREATION.

Although the above name appears ostentatious, I fail to see it is so, because it embodies within itself every good feature a hive can possess. It is a thoroughly protected hive, and can either be moved about as it is, or in a few minutes converted into a hive occupying the least possible space superficially with the greatest amount for breeding and storing purposes, upon the most approved principle, while for queen-rearing and manipulative purposes it is excellent and unsurpassed.

Each division can be drawn out, examined, and returned without killing a single bee, and all this, too, when one or more tier of supers are on. In another article I will give details, so that any amateur with but few tools will be able to make, and as useful as if made by the best tradesman.

PAINT.

I have about half a dozen queries regarding painting hives and the colour. As the weather has been unfavourable for that work, a dry spell coming should be taken advantage of. I will therefore answer these in a general, and not a special manner. As to the colour, this depends altogether upon the taste of the individuals interested. Light colours throw off the heat of the sun, while dark colours absorb it and shrink the wood more. Mediums are often in this, as in other things, best. For hives a light fawn is a pleasing colour, but as bees recognise colour readily, a device of different colour is advisable to be painted on each hive where the wood is exposed; where it is not, a different coloured cloth is advisable. No matter what colour the outside woodwork is to be finished, the priming or first coats should be of genuine red or whitelead ground with raw oil. No boiled nor any dryer whatever should be used, and proprietors should not trust tradesmen to do as they wish, but see that all outside work be painted as I have stated. Genuine red lead is the best for resisting oxydisation on either wood or metal, and it and raw oil sink into the wood, tending to its preservation, which boiled oil does not. For stone, raw oil of itself is a good preservative.

TARRED HIVES.

I am also asked if tar is injurious to bees. The idea that tar or tarred receptacles are injurious to bees is simply erroneous. There is nothing bees are fonder of sipping water from than tar barrels. I have the inside of my double-cased hives well tarred, and the bees do well in them, while it prevents dampness inside, and the ventilating floor carries it away. In close, well-made, double-cased hives, when not painted or tarred inside, the moisture passes from the inner to the outer case, and paint does not adhere well, and rot is inevitable. Double-cased hives are ill adapted for bee-keeping, both as regards clumsiness, and are unhealthy for the bees.

COMBINATION HIVE.

I have a letter taking me to task for recommending the tiering hive, advocating the "Abbott Combination Hive." The paper to which I am directed I do not read, nor do I agree with my anonymous correspondent in all he says. One thing, I do, however—viz., that the old, and ought to be obsolete, "Combination Hive," is the best non-swarming hive extant, because of no less than twenty I have seen this year the bees had all died in them. His other remarks I cannot comment on, as like all anonymous letters it was burned. I am prepared to discuss any question whatever on bees submitted in an honest and straightforward manner, and such only will meet the attention and approbation of—A Lanarkshire Bee-keeper.

I have letters containing numerous queries to which I have been unable to reply to, but will do so as early as possible.

TRADE CATALOGUES RECEIVED.

Messrs. John Laing & Son, Forest Hill, London, S.E.—*Catalogue of Bulbous Roots, Fruit Trees, &c., 1888.*

Wm. Thomson & Sons, Tweed Vineyard, Clovenfords.—*Vine, Plant, and Vegetable Manure; List of Testimonials.*

Barr & Son, 12 and 13, King Street, Covent Garden, London, W.C.—*Catalogue of Bulbs and Daffodils for 1888.*

Société Anonyme L'Horticulture Internationale, Brussels, Belgium.—*Catalogue of Orchids and New Plants, 1888–1889.*

Thomas Davis & Co., Wavertree, Liverpool.—*Catalogue of Bulbs and Flower Roots.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Exhibition Roses (*Curious*).—Your explanation is conclusive, but, as you intimate, the facts of the case could scarcely have been anticipated. If you are not able to consult the volume for the last half of 1887 we will send you the number in question if it is still in stock and you will send us your full postal address.

Wintering Amaryllises, Begonias and Gloxinias (*Ardwyn*).—Seedling Amaryllises are usually wintered in the pots, boxes, or beds in which they are raised, gradually reducing the water supply at this season, and when the leaves die giving little or no water in the winter, though the soil is scarcely kept as dry as dust. They are safe in a temperature of 45° to 50°. Many large growers of Begonias and Gloxinias store the tubers in large pots or boxes of pine sawdust, this keeping them sound, and is said to render them comparatively safe from mice. They are also kept in nearly dry cocoa-nut fibre refuse, in about the temperature above named for Gloxinias, but it may be lower for Begonias.

Levelling Ground for Cricket (*F. L. D.*).—To level a piece of land 40 yards by 40 yards with a fall of 2 feet from one end, the "width being about level," about 500 cubic yards of soil will be required; but why not make the ground level itself, and so save the cost of carting, &c.? It would be more economical, and the work well executed a much

better ground would be formed for playing the popular game. It would be very inconvenient to have all the slope at one end. The cost for lifting, levelling, and relaying must of necessity depend upon the nature of the ground and the manner in which the work is done, with the value of labour in the locality. The cartage of the soil would be worth about 1s. per cubic yard.

Transplanting Hollies and Conifers (*W. K.*).—The weather being mild and moist, from the middle of September to the early part of November is a good time to plant Hollies. The chief cause of these evergreens failing is the careless manner in which they are lifted, and exposure of their roots between lifting and planting to the drying influences of the atmosphere, which destroys their fibres; indeed, many shrubs, from the exposure and dryness to which they are subjected, are nearly dead when planted. Hollies also transplant safely during moist weather in April, just when they are beginning to grow, which varies with the season. Autumn planting is, however, most successful. What suits Hollies also favours the transplanting of Conifers, early autumn or late spring being most suitable.

Writing and Spelling (*Bothyite*).—You ask a question not easy to answer categorically, because there are degrees of badness. You want to know "whether bad writing and good spelling is a worse combination than good writing and bad spelling." We have a fair share of both, but prefer the former, always provided the bad writing represents good grammar. Some of the most highly educated persons and talented authors are what you would call "bad" penmen, and we cannot pronounce them good, but their correct method of expression disarms hostile criticism, but errors in spelling simple words almost look worse when the handwriting is good than when it is bad. We cite just one sentence from a very neatly written letter in which there are three words out of nine so grossly misspelt as to appear little less than hideous—"The gardener his appointed steward over the hole estate." We venture to say the gardener would not have been appointed steward if he were capable of making such blunders, no matter how good his writing might be.

Perennials for Flowering in August, September, and October (*W. R.*).—Your soil being light and dry, mulching and watering must play an important part, otherwise the growth will be poor and the flowering correspondingly unsatisfactory. Of Asters, Amellus, bessarabicus, dumosus, formosissimus, grandiflorus, Novæ Angliæ and var. rubra, Novæ Belgiæ, polyphyllus, and tubinellus. Alstrœmerias aurea, peregrina, and var. alba, peruviana; Anemone japonica, and A. japonica alba; Asclepias tuberosa, Campanula Hendersoni, Chelone obliqua and var. alba, Coreopsis lanceolata, Erigeron speciosum superbum, Eryngium amethystinum, Franceoa ramosa; Fuchsias corallina and Riccartoni, Funkia grandiflora, Gillenia trifoliata, Harpalium rigidum, Helianthus multiflorus fl.-pl., Hyperieum nepaliense, H. triflorum, Leucanthemum maximum, Malva moschata alba, Œnothera speciosa, Oxalis-floribunda rosea, Pentstemon labrosus, Pyrethrum uliginosum, Rudbeckia Newmanni, Salvia patens, Schizostilis coccinea, Sedum spectabile, Senecio pulcher, Solidago virgaurea nana, Tritoma var., Zauschneria californica, Gaultonia candicans, Liliums auratum, longiflorum Harrisi, speciosum (lancifolium) var., and tigrinum splendens. Chrysanthemums of the early-flowering section would do well if mulched and watered. Souvenir d'un Ami, Fiberta, Lyon, Precocité, Madame Desgrange, G. Wermig, and others. They are very effective and useful for cutting.

Alternanthera Failures (*C. E.*).—Alternantheras are essentialyl heat-loving plants, and the present season has been most unfavourable to their growth, failures being general. They rarely form much fresh strong growth after being planted, but the stunted shoots produced are invariably the most highly coloured. The best effect is produced by putting out quite small plants very thickly in the first instance. Strong plants may look well for a few days, but when the broad or fully developed leaves fail, which they very soon do, there is nothing to take their place, for some time at any rate, and a failure may be the result. Not only are Alternantheras very much smaller than when first put out, but Colcuses and Iresines are not much better. Alternantheras cannot well be dispensed with, there being no substitute sufficiently dwarf and richly coloured. A. paronychioides aurea is the most delicate, and scarcely so bright yellow in colour as a good strain of Golden Pyrethrum. A. versicolor is more robust, and with us is looking fairly well. A. paronychioides magnifica is a great improvement on the old form, and does not often fail. A. amabilis latifolia is richly coloured, and one of the best for carpet bedding. You appear to have well prepared the beds, and in all probability if smaller plants are put out more thickly, or as close together as they need be at the right time next season, there will be no failure. In any case it is advisable to keep a few plants in boxes ready for any emergency. These, if needed, can be dibbled among those first planted, or they can be kept as stock plants for propagating purposes.

Gesnerias from Seed (*J. E.*).—The time at which the seedlings flower depends on the suitability of structures for growing them and the skill of the cultivator. They are raised and grown as follows:—Sow in February or March on the surface of a light, sandy compost in a warm stove and moist atmosphere, and as soon as the seedlings are up, and the plants have attained a leaf or two, transplant them thinly in light free soil in shallow pots, and let them grow there during the summer. Allow them to go to rest in the autumn, and keep them in the same pots through the winter, giving but little water. As soon as life appears again in the spring pot them off singly into small pots, watering and repotting as may be required; but it is more than probable they will not flower till the second year. Light fibrous loam, turfy peat, and half-decayed leaves in equal parts, with a due portion of sand, well mixed, but not sifted, form a suitable compost. To have a succession of bloom pot a portion of the tubers in January, and place them in a temperature of 60° to 80°. Pot a second batch about the middle of February, and another towards the end of March. These will supply flowers for several months. Put them in pots according to the size of the bulbs; keep them regularly watered, but never very wet. They may be syringed occasionally previously to flowering, but not much, for the leaves are so woolly that they hold moisture too long if syringed severely. When the blooming season is over they may be set out of doors during summer, but should be sheltered from heavy rains. They will then gradually go to rest. All that they require in the winter is to be kept in their pots in a place where neither frost nor wet can reach them; yet the place should never be below 45°, nor above 55°. If the cold is much lower they will be apt to rot, and, if higher, to start into growth.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials suffieing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Hopeful*).—The Grapes are certainly not ripe, and on that account we cannot speak positively as to the variety, but suspect it is Alnwick Seedling. They will be much better in a month's time. The shape of the berries varies somewhat, and we have seen some more oval than those you have sent. (*Colden Common*).—As has been many times stated, though you do not appear to have seen the intimation, Peaches cannot be named without good leaves of the trees are also examined, as the glands on them are an important factor in the case. It is quite essential also to know whether the flowers are large or small.

COVENT GARDEN MARKET.—September 5th.

THE soft fruits being now over, our market is very quiet, Plums and Apples coming very short.

FRUIT.

	s. d.		s. d.		s. d.		s. d.
Apples, ½ sieve	2 0	to	4 6	Lemons, case	10 0	to	15 0
Cherries, ½ sieve	0 0		0 0	Oranges, per 100	4 0		9 0
Cobs, 100 lbs.	0 0		0 0	Peaches, dozen	2 0		10 0
Currants (Red), ½ sieve	0 0		0 0	Pears, dozen	0 9		1 6
,, (Black), ½ sieve	0 0		0 0	Plums, ½-sieve	3 0		5 0
Grapes, per lb.	0 6		2 6	St. Michael Pines, each	3 0		5 0

VEGETABLES.

	s. d.		s. d.		s. d.		s. d.
Artichokes, dozen	2 0	to	3 0	Lettuce, dozen	0 9	to	1 3
Asparagus, bundle	0 0		0 0	Mushrooms, punnet	0 6		1 0
Beans, Kidney, per lb.	0 2		0 0	Mustard and Cress, punt.	0 2		0 0
Beet, Red, dozen	1 0		2 0	New Potatoes, per cwt.	8 0		14 0
Broccoli, bundle	0 0		0 0	Onions, bunch	0 3		0 0
Brussels Sprouts, ½ sieve	0 0		0 0	Parsley, dozen bunches	3 0		3 0
Cabbage, dozen	1 6		0 0	Parsnips, dozen	1 0		0 0
Capsicums, per 100	0 0		0 0	Potatoes, per cwt.	4 0		5 0
Carrots, bunch	0 4		0 0	,, Kidney, per cwt.	4 0		8 0
Cauliflowers, dozen	3 0		4 0	Rhubarb, bundle	0 2		0 0
Celery, bundle	1 6		2 0	Salsafy, bundle	1 0		1 6
Coleworts, doz. bunches	2 0		4 0	Scorzonera, bundle	1 6		0 0
Cucumbers, each	0 3		0 4	Shallots, per lb.	0 3		0 0
Endive, dozen	1 0		2 0	Spinach, bushel	1 6		2 0
Herbs, bunch	0 2		0 0	Tomatoes, per lb.	0 3		0 7
Leeks, bunch	0 3		0 4	Turnips, bunch	0 4		0 0

CUT FLOWERS.

	s. d.		s. d.		s. d.		s. d.
Ahutilons, 12 bunches	2 0	to	4 0	Margnerites, 12 bunches	2 0	to	6 0
Arnm Lilies, 12 blooms	2 0		3 0	Mignonette, 12 bunches	1 0		3 0
Asters, dozen bunches	2 0		4 0	Pansies, 12 bchs	1 0		3 0
,, French, per bunch	1 0		1 6	Polargoniums, 12 trusses	0 6		1 0
Azalea, 12 sprays	0 0		0 0	,, scarlet, 12 trusses	0 3		0 6
Bouvardias, bunch	0 6		1 0	Pinks, varions, 12 bunches	0 0		0 0
Calceolaria, 12 bunches	0 0		0 0	Polyanthus, 12 bunches	0 0		0 0
Camellias, 12 blooms	0 0		0 0	Pyrethrum, doz. bunches	2 0		4 0
Carnations, 12 blooms	0 6		1 0	Roses, Red, 12 blooms	0 6		1 0
,, 12 bunches	4 0		6 0	,, (ontdoor), 12 bchs	2 0		6 0
Cornflower, 12 bunches	1 6		3 0	,, (indoor), dozen	0 6		1 0
Daisies, 12 bunches	2 0		4 0	,, Tea, dozen	1 0		2 0
Eucharis, dozen	2 0		4 0	,, yellow	2 0		4 0
Gardenias, 12 blooms	1 6		4 0	,, (Moss), 12 bunches	0 0		0 0
Lapageria, 12 blooms	1 0		2 6	Stephanotis, 12 sprays	1 6		3 0
Lavender, 12 bunches	3 0		4 0	Stocks, 12 bunches	4 0		6 0
Lilinm candidnm, per bnnch	0 0		0 0	Sweet Peas, dozen	2 0		4 0
,, 12 blooms	0 9		0 0	Sweet Sultan, 12 bunches	2 0		4 0
Lilinm longiflorum, 12 blooms	2 0		4 0	Tropæolnm, 12 bunches	1 0		2 0
				Tuberoses, 12 blooms	0 4		0 9
				Gladiolus, 12 sprays	0 6		1 6

PLANTS IN POTS.

	s. d.		s. d.		s. d.		s. d.
Aralia Sieboldi, dozen	6 0	to	12 0	Fuchsia, dozen pots	3 0	to	6 0
Arbor vitæ (golden) dozen	12 0		24 0	Genista, per dozen	0 0		0 0
Asters, 12 pots	3 0		6 0	Heliotrope, dozen pots	3 0		6 0
Balsams, per dozen	2 0		4 0	Ivy Geranium	0 0		0 0
Calceolaria, per dozen	4 0		5 0	Hydrangea, dozen	6 0		12 0
Chrysanthemum, doz. box	4 0		9 0	Lilies Valley, dozen	0 0		0 0
Coleus, dozen	2 0		4 0	Lilinm, various, doz. pots	12 0		21 0
Crassnla, dozen	8 0		12 0	Marguerite Daisy, dozen	6 0		12 0
Dracæna terminalis, doz.	30 0		60 0	Mignonette, per dozen	4 0		6 0
,, viridis, dozen	12 0		24 0	Musk, dozen pots	0 0		0 0
Euonymus, in var., dozen	6 0		18 0	Myrtles, dozen	6 0		12 0
Evergreens, in var., dozen	6 0		24 0	Nasturtinms, per dozen	3 0		6 0
Ferns, in variety, dozen	4 0		18 0	Palms, in var., each	2 6		21 0
Ficus elastica, each	1 6		7 0	Pelargoniums, dozen	4 0		9 0
Foliage Plants, var., each	2 0		10 0	,, scarlet, doz.	3 0		6 0



LANDLORDS' FARMING.

Michaelmas, always an important time to all connected with agriculture, has, under the depression, acquired much more importance, especially to the landlord and his agent, for it is indeed seldom now that the term passes by without one or more farms falling in hand, and what to do with such farms becomes a serious question—altogether one of ways and means, only to be resolved satisfactorily when enough money is forthcoming to enable the agent to take up the farm and bring it into a high state of cultivation. No light matter is it to undertake this work, for in nine cases out of ten the land is "farmed out" in the full sense of the term ; poverty stricken, foul with weeds, and very likely requiring redraining. Under such unfavourable conditions, combined with low prices for farm produce, the work of reclamation is beset with difficulties, which, if not positively insuperable, are not to be overcome in a single season, except at a ruinous outlay. Under ordinary circumstances we do not recommend such an outlay, but rather to spread out the work over two or three years, so that the farm may at least be rendered self-supporting after the first year. For with farm after farm falling in, cautious expenditure is forced upon us, and we are bound to do all that is possible to curtail expenses.

Now we often hear the assertion that landlords' farming is not only unprofitable, but is positively ruinous ; and it has become no small part of the work of an estate agent to prove to demonstration that such assertions are false. We go further than this, and accept the challenge thus given, striving by every means in our power to prove that when once poor farms have been restored to a high state of fertility they become so profitable as to render it desirable to retain them in hand, as affording returns upon outlay altogether superior to the rent to be obtained from a tenant.

In order to do this, judicious expenditure must be combined with rigid economy, so that enough money may be invested in the farm, and all fanciful or needless outlay avoided. We know a landlord with several farms in hand who will allow no Wheat to be grown upon any of them. Oats take the place of Wheat, and are not by any means a full crop this year. A certain loss upon such landlord's farming is inevitable, yet such risk of loss might have been avoided if the land had been in a suitable condition to yield a full crop of really fine Oats. It still answers to cultivate a fair proportion of most farm crops upon any farm with soil of sound staple if only the culture is really sound, but it does not answer to indulge in speculative crops or to venture far after novelties of any sort. The cultivation of Oats as a substitute for Wheat on English farms is certainly a novelty which could only find its justification in a paying crop. By this term we mean a crop of at least 80 bushels per acre, which quantity we have grown, but we know other farmers who by high cultivation and the use of select seed of improved sorts claim to have grown as much as 116 to 121 bushels of Oats per acre. Well done ! say we, for that is the way to meet hard times. Grow more and better crops, and instead of giving up Wheat-growing let us see if we cannot get more grain and straw out of every acre of land.

Very desirable is it that landlords' farming should be so good as to afford an example to the tenants of the best way of doing things. But for it to be the best way it must show a fair margin of profit, that is the true, safe, and final test ; and when a landlord or his agent can show the tenants how to get more out of the land their mutual interests will be advanced, a feeling of confidence will be created and fostered, and the landowner will be held in honour as the true friend of his tenants.

It is doubtless pleasant to see a farm in the landlord's hand that is a model of what farming should be in every detail and feature. But in these times we cannot afford expenditure upon mere appearance, and although it is an agreeable sight when every fence and hedge are in perfect order, we cannot advise our readers to expend money upon them beyond certain limits. By all means keep cattle and sheep fences and the boundaries of a farm sound, but on arable land we are getting rid of all superfluous hedges and ditches as fast as we can, taking especial care to put down large drains in every ditch beforehand.

(To be continued.)

WORK ON THE HOME FARM.

Dull unsettled weather still retards the ripening of the corn, but most of the Wheat is now ready for the reaper. Much is cut and is in shock, and a little is in stack. Needy farmers whose calculations are altogether upset by the late harvest have another trial in having to wait for the corn thrashing, soft Wheat being practically unsaleable when brought as it now is into competition with hard dry foreign corn. Owners of hop kilns are advised to turn them to account for drying Wheat, and we have known maltings turned to account for the same purpose, an equal quantity of damp grain being mixed with the dry grain on the barn floor immediately it is brought from the kiln. It is left for a day or two after the mixing, then passed through a winnowing machine before it is put into sacks for market.

Barley mowing has not yet become general, for it ripens very slowly. Two or three weeks of fine bright weather would enable us to save it in fair order, but it is already so much discoloured that it seems almost hopeless to expect a really fine malting sample this year. Where the Barley is beaten down there is a second growth of green patches that is a lamentable sight, for wherever such patches occur the Barley is spoilt. The best crops of Peas are those which were sown early in spring ; they have podded well, and likely to be saved in good condition. Later crops have a few full pods, and many half full. The lower part of the haulm is rotting, and there is nothing for it but cutting the haulm at once and trying to ripen and harvest it. This is done gradually early in the day before other corn is sufficiently dry for reaping. Of Beans the winter crop is excellent, but spring Beans have made a remarkable growth fully 5 feet in height, and many of the upper pods are abortive. On the whole we have crops of average abundance, but all are exceptionally late, and the weather so far has been unfavourable for saving them. We still hope to be able to do this, and every arrangement has been made for prompt action if the weather clears. All depends upon this, for without fair weather our best efforts are liable to failure, and the waiting for the much-desired change is both tedious and disheartening.

OUR LETTER BOX.

Gorse as Cattle Food (*J. J. W.*).—The clippings of Gorse fences are sometimes used as cattle food, and the sloping banks often found in hilly districts as well as the banks of railway cuttings may be turned to account by the growth of Gorse. One of the reasons why Gorse has not attracted more attention as food for stock is in consequence of the difficulty of reducing it into a state fit for food, by breaking down the prickles and points on the stems of the plants. Analyses by various chemists have been taken, but that given by Mr. Lawes and Dr. Voelcker in comparison with other food is the most important. As follows :—

Name of Food.	Flesh-formers.	Fat-formers.	Name of Food.	Flesh-formers.	Fat-formers.
Furze or Gorse	3·21	9·44	Swedes	1·94	5·93
Cabbage	1·63	5·06	Carrots	0·60	10·18
Kohl Rabi	2·75	8·62	Common Turnips	1·80	4·41
Mangold	1·54	8·60	Clover hay	4·27	9·14

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. August & Sept.	9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 26	29.9 4	61.5	5 4	S.W.	59.3	68.9	54 6	108 7	49 5	0.010
Monday 27	29.979	62 3	56.7	S.W.	59.0	69 3	52 2	105.5	46 6	0.101
Tuesday 28	29 868	57.2	56.7	E.	59.0	62.6	56 6	97.4	51.7	0.8.7
Wednesday .. 29	29.9 3	58.6	52.9	S.W.	58 0	63.7	49.0	104.2	44 8	0.049
Thursday 30	29.986	58 5	53.3	S.W.	57 2	64.7	43 8	112.0	40 7	0.406
Friday 31	30..39	56.6	50.7	N.	56 6	63.9	46.7	111.0	4[illegible]	—
Saturday 1	30.343	57.9	52 8	N.	56 3	67 6	42 4	116.3	3[illegible]	0.039
	30.040	58.9	54.2		57 9	65.7	49.8	107.9	44.4	1.422

REMARKS.

26th.—Fine, with frequent sunshine in morning, showery afternoon, fine night.
27th.—Fine and generally bright morning, cloudy afternoon, spots of rain in evening.
28th.—Wet all day, with strong wind at night.
29 h.—Fine bright morning, showery afternoon.
30th.—Fine and generally bright morning, heavy rain with lightning and thunder at 2.30 P.M. and showery after.
31st.—Bright and fine throughout, but cool.
1st.—Fine bright day, spots of rain in evening.

A cool and wet week, but with a good deal of sunshine between the showers. During the slight thunderstorm on 30.h 0.180 inch of rain fell in four minutes.—J. J. Symons.

THE FRUIT REVIVAL.

As sure as the autumn comes round the attention of cultivators is directed to the subject of tree planting with the object of providing a fuller and better supply of home-grown fruit. That object is a most important one and demands the best efforts of all who can share in its fulfilment. What we have long and frequently urged is being more and more recognised—namely, that owners and occupiers of land in this country should no longer remain content to allow cultivators three or four thousand miles away to have so large a share in furnishing British markets with hardy fruit and taking therefrom so much of British gold.

The lethargy of landowners and leaseholders in respect to fruit culture is remarkable. They appear as a body to have shunned rather than encouraged it. It is true there are exceptions, but they are only just sufficiently numerous to prove the rule. The orchards of this country are, broadly speaking, a disgrace to the nation. No doubt improvement is apparent in some districts, and many acres of land are now occupied with thrifty plantations; but all the same an overwhelmingly greater area is encumbered either with worn-out trees or varieties that cannot compete successfully with the well graded importations of fruit, especially Apples, from other lands. There is only one certain and reliable way of limiting those importations, and that is the natural one of growing more and better fruit at home. Supplies can no more be prevented reaching markets that are open to them than water can be prevented flowing down hill; and in these days purchasers do not stop to inquire from whence comes the produce they buy, and that which best pleases the eye and suits the pocket finds the readiest sale. It was probably always so. It is not in human nature to prefer the relatively dear and inferior to the cheap and superior; but still there are persons having produce to sell who appear to desire that consumers should become patriots and make a sacrifice in purchasing their wares. This will come to pass, perhaps, when the owners of estates in the country furnish their mansions from village shops instead of from London stores. The high and the low, the rich and the poor, purchase where they think they are served the best regardless of the sources of supply, and they are quite justified in doing so. That is the custom of mankind, and it embraces fruit as surely as any other commodity.

Those persons are the best friends of their country who develope its resources the most completely, and it is through negligence, want of enterprise, trusting to chance, clinging to old ways under changed circumstances, waiting for public opinion to turn in a desired direction, and losing time in the waiting—it is this standstill policy, so to say, that has made the opening for distant competitors, who saw their opportunity and seized it; and at last there are signs that the facts of the case are recognised. A forward movement is necessary, for in reality there can be no standing still while others are passing, because the faster these go the further the resters are left behind. British landowners and leaseholders have rested too long in the matter of fruit-growing. The population has increased in a much greater ratio than have the efforts for supplying its wants with wholesome, appetising, nutritious fruit. This has not been produced at home so well as in other lands, hence the extraordinary circumstance of Apples from Michigan being sold, not in our large cities alone, but in remote country villages with land all around them, seemingly in too great abundance to be tilled, waiting for trees of the best varieties to be planted. What can be expected from such inactivity but foreign supplies? They are simply invited by it, and they come and are welcomed by those who need them.

But the possessors of British orchards argue, "We have more Apples than we can sell, and they have to be wasted or given to the pigs. What is the use of growing more?" It is of no use, but worse than useless, wasteful, growing what is worthless. That bad habit has endured too long. The best of fruit, and not the worst, must be grown, and this never fails to find purchasers at remunerative prices when the crops are fairly good. The qualification in the last sentence implies uncertainty. This is a necessity of the case, and it is best to admit it. It is not peculiar to this country, but a contingent of other lands. If the Apple crops fail here American orchardists send us fruit. Why should they not do so? And if the crops fail there, and are full here, why should not we have as good samples to send them as they send us? The American Apple crop was light last year, the result being a decrease in our imports of nearly one and a half million bushels from the three million bushels of 1886. Large consignments of Potatoes were sent from Lincolnshire and Yorkshire last year to New York, leaving a margin of profit behind them. Some fruit enthusiasts denounce Potato-growing as ruinous, and if their random writings are to be taken seriously Potato culture would be abolished and Apples grown instead everywhere. There is room for both to be grown profitably if grown well; but if what is alleged to be unprofitable can be sent across the Atlantic to market why cannot the crop—Apples—which is, when good, certainly more remunerative, be disposed of in the same way? It is entirely a question of quality and cost of production. As to quality, when the best of American Apples have been staged with English fruit at International Fruit Shows at South Kensington and the Crystal Palace, the average merit of the collections was undeniably in favour of the old country. That is a very significant fact, and shows what can be done with a good selection of varieties and high cultivation.

As to cost of production, land is now almost as cheap here as it is in America where the best fruit is grown. The average productiveness of cultivated land is much higher here than there, as is conclusively shown by the Wheat averages of the two countries—ours being about 29 bushels per acre, theirs less than 19 bushels—and surely the better the land is for Wheat the better it must be for fruit. American summers are hotter and brighter than ours, increasing the colour of fruit; but there is the drawback of drought, and "bugs" innumerable; also of severe winters killing the trees. Labour is much cheaper with us than with our transatlantic competitors, though they possibly turn it to better account than is customary in this country, and they perhaps have the advantage in rates for the transit of fruit, brought about probably by community of effort that has resulted in a better system being established. We ought to do something for America in return for her consignments of fruit, and if we cannot yet send Apples we ought for every million tins of Tomatoes received to be able to return the compliment with as many pots of jam or preserved fruits, which are prepared here cheaper than there, and will be if sugar does not rise in price.

American cultivators are also fully alive to the importance of sorting, "grading," and the careful packing of fruit. Their consignments are marked by a much greater uniformity of excellence than obtains in the produce of home orchards. They have planted large tracts of land with few varieties of known marketable value, while the habit at home has been to plant small tracts with many varieties. In country districts the "gardener at the hall" has been entrusted with the choice of varieties when twenty, fifty, or a hundred trees have been wanted by local farmers and others desiring to grow "fruit for profit," costly mistakes having been made in consequence. More than half the private gardeners in the kingdom, however competent they may be in their calling, and no

matter how satisfactorily they may discharge their duties, are necessarily unacquainted with the demands of commerce in fruit and how best to meet them. This is no fault of theirs, though not a few have gained knowledge on the subject by reading, also by visiting the sources of supply and distribution; but all the same, safe and sound local advisers are in the minority.

An example of the unwisdom of acting on the advice of the nearest local gardener in the choice of trees for producing fruit for market can be given. Fifteen years ago a farmer, safe in his holding, planted 300 Apple trees. Not six trees of one variety can be found in the whole plantation, but in the majority of the rows there are only two and three trees of a sort. A greater blunder could scarcely have been committed. Many of the trees are worthless, and most of the fruit has had perforce to be mixed and disposed of for smashing to form the body of, or provide syrup for cheap jam. That kind of Apple-growing will not "pay," and as a matter of fact the occupier of the land in question wishes he had never planted the trees. He would, however, be foolish to destroy them, as they may yet be made profitable by grafting. That is by no means a solitary instance of the kind that could be adduced, and similar mistakes may be seen in orchards of various sizes all over the country.

A revival of interest is clearly apparent in the subject of fruit culture as a profitable industry. The great want is knowledge founded on facts, and not on individual fancies. The subject is a tempting one for sensational writers and speakers, who find it easy to show in figures that fabulous profits are at the command of all who have an acre or two of land and will plant it with Apple trees. Fifty or sixty pounds an acre are to be cleared in that way, say the enthusiasts, but they do not say when. No account is taken of the time in waiting for the harvest, nor of the certain contingency of unfruitful seasons. The Apple crop is more often under the average than above it, and it is no long time since orchards were practically barren for four or five consecutive years. It is best to be moderate in anticipation, or victims of disappointment may be created. It is enough to know that there is never a general failure of all kinds of fruit; and also to be assured that a well-conducted system of fruit culture gives a fair return on the outlay invested in it; but something besides Apples must be grown, and soft or bush fruits are more quickly remunerative, if not more permanently satisfactory to the growers.

Conferences or conventions of fruit growers have long been held in America, also on the European continent, and a great amount of knowledge thereby obtained and disseminated. Small gatherings of fruit growers and other persons interested are held periodically in certain localities in England, and no doubt serve a good purpose; but such meetings as the one held at the Crystal Palace last week, and another to be held under the auspices of the Royal Horticultural Society at Chiswick in October, are invested with a distinctly national character. The Palace Conference was a great success, the attendauce being large and enthusiastic, while the papers read were worthy of the occasion and object. At the Chiswick Conference typical fruit of marketable value from various districts of the country will be represented, and the best selections of varieties for commercial purposes made by cultivators in those districts. From such conferences as these information must be forthcoming that will be of great value to intending cultivators of fruit on commercial principles.

CONFERENCE OF FRUIT GROWERS.

The Conference of Fruit Growers at Sydenham, proposed early in the present year and previously referred to in these columns, was held on Friday and Saturday last, September 7th and 8th, in the dining saloon at the Crystal Palace. Upon the first day there was a large and representative gathering of gardeners, fruit growers, and amateurs interested in the subjects to be considered. Amongst those present were the Chairman, T. Francis Rivers, Esq.; Dr. M. T. Masters, the Rev. W. Wilks, and Messrs. A. F. Barron, J. Laing, G. Bunyard, A. H. Pearson, Peter Veitch, J. Douglas, D. T. Fish, J. Wright, C. Ross, C. J. Goldsmith, W. Goldsmith, G. Gordon, S. Ford, A. Dean, Albert Bath, T. W. Beach, J. Willard, H. Bennett, E. Molyneux, W. Wildsmith, W. H. Ward, A. Miller, W. Pratt, R. Parker, &c., with the Hon. Secretaries Messrs. Lewis Castle and Wm. Earley.

It was decided to take all the papers first, and these were read in the following order on Friday, some modification of the programme having been necessary to suit the convenience of those who wished to be present on that day. Mr. Rivers took the chair shortly after 3 P.M., and read a paper on "Fruit Culture for Profit." Mr. Webber of Covent Garden, contributed a paper on "Packing Fruit." Mr. S. Rawson of Birmingham, and Mr. R. Smith of Yalding, Maidstone, following on "Packing, Carriage, and Marketing." Mr. Albert Bath of Sevenoaks, read a brief but pithy paper on "Land Tenure in Relation to Fruit Cultivation." Mr. Miller of Esher, and W. Iggulden of Frome, also contributing interesting papers on grafting and fruit culture, and Mr. T. W. Beach read a short paper respecting Lord Sudeley's fruit farm at Toddington, Gloucestershire.

FRUIT CULTURE FOR PROFIT.

By T. Francis Rivers, Esq., Sawbridgeworth.

Our meeting to-day is, I hope, the first of a series of meetings on the very important subject of fruit culture in England for profit. Within the last few years a very great advance has been made in this direction by the force of circumstances, and not by the speeches of any one man, however eminent. When Wheat was worth from 40s. to 60s. per quarter there was no need to apply the resources of the land to any other purpose, as the price of Wheat governed the price of produce, and was amply sufficient to support the different interests depending on the land. We have now, however, to face an altered condition of affairs. The land is with us, and is as productive as ever, but the consumer no longer pays the price required by the English producer; and although it is absurd to suppose that corn is not still the ruling crop, yet all cultivators are forced by circumstances to consider whether they cannot be assisted by other crops. One of these helps or aids is undoubtedly the cultivation of fruit, which is of daily consumption, and is, or ought to be, on the table of every individual in the United Kingdom. We have, therefore, to deal with a very large subject—nothing less than a national industry, and an increasing one, the development of which enters into conflict with no British interest, treads on no man's toes, is strictly non-political, will suffer no decay but improve as the years roll on, and in which succeeding generations are quite as much interested as we are, and is a pursuit from first to last which never wearies. A man between seventy and eighty can make the superintendence of orchards both his pleasure and employment.

We have not, I think, in England held enough meetings of this kind; they are frequent enough in the United States, where fruit is an important factor in national life, and takes rank with the most advanced agriculture. In Belgium, a country which profits largely from the exportation of fruit, pomological congresses are constantly held. I have attended several, my first introduction to Belgian pomologists being at Namur in 1862, when the hospitality of the town was profuse and splendid. There can be little doubt that these meetings are of great public utility, and now that we are entering the lists and preparing to meet an enormous and increasing domestic want, it does not become a great and wealthy country like England to be anywhere but first in the race. Our climate is good, our soil so varied that we can find land for all ordinary crops. Although we are subject to cold and late springs yet we do not suffer from the extreme of heat and cold to which great continents are subject, storms which destroy the fruit, and cold which will destroy the trees. Neither is it so equable that fruit trees are exhausted by continual bearing, a condition under which eight to ten years would be the term of the natural life of the tree, conditions which would no doubt be satisfactory to the fruit tree grower, but with the inevitable result of the supply overtaking the demand, and of the usual disastrous consequence. Of this, however, we need have no fear. We must, in order to secure early profits from a garden orchard such as I propose, plant on a different principle to that of our forefathers, who have bequeathed the hoary and lichen-covered trees dear to the artist and fruit-loving boys and girls. These picturesque old trees are as much things of the past as our wooden three-deckers, and instead of the acre of grass land with the customary 108 trees often broken down by stock, and producing more wood than fruit, the modern fruit orchard must be condensed into a compact compass, give more fruit in 1 rood of land than in 2 or 3 acres of the old-fashioned style.

Soil.—The most important part of the preparation of an orchard is, of course, the quality of the soil, and the intending planter should not

hesitate to spend a few shillings in obtaining an analysis. I attribute a great part of my success in fruit growing to the nature and qualities of the soil. An analysis made by Dr. Voelcker for Mr. Prout of Sawbridgeworth gives the following constituents of the land on his farm, mine being the same formation and closely identical. The quantities are contained in depth of 6 inches per acre—

Phosphoric acid ..	2½ tons	Sulphuric acid ..	2½ tons
Potash	5½ tons	Nitric acid ..	22 lbs.
Lime	37 tons	Nitrogen	1 ton
Magnesia	4½ tons		

I shall show presently by an analysis of fruit that the inherent qualities of this soil are vastly favourable for certain classes of fruits, and if the depth instead of 6 inches is extended to 20 inches, to which the roots of fruit trees will reach in searching for food, the aliment afforded is of inexhaustible amount. With our present knowledge of artificial manures all deficiencies in other soils may, however, be easily supplied; but I hope you will agree with me that an analysis of the soil is indispensable, and that it is necessary not to judge only by appearance, but to gain an intimate knowledge of the soil constituents. A deep rich loam is sometimes misleading, and trees, though apparently vigorous at first, being deprived of their requisite food will become cankered and stag headed. The cultivator must make it his business to cure this defect, which an elementary knowledge of chemistry and of the application of chemical manures will enable him to do. The position of the orchard is another important point. It is, I think, well known that frosts are more severe in low lying lands near rivers, and fruit trees should consequently be planted above the line indicated by the rising mists.

The preparation of the soil is the next point, and I will assume that a man with 100 acres of land can afford to devote one rood for the cultivation of an orchard; this must be fenced with wire netting high enough to keep out hares and rabbits during snow, as one night's visitation of these animals would suffice to destroy the growth of years and to ruin the plantation. In my own case I have sunk a barbed wire to prevent burrowing. Wire netting is so cheap that this expense is not great, and with proper care it will last for years. At all events, it must be incurred, for although rabbits may be utterly destroyed, hares will travel for miles in search of food. In Belgium in the fruit-growing districts they are altogether absent, but it is not likely that this will ever be the case in England. The land, if at all infested with twitch, should have a summer's fallow to eradicate this pest, as it cannot be easily destroyed when the trees are planted. It will grow amongst the roots, and is then most difficult to deal with. As early in September or October as practicable the rood of land having been previously dressed with some 12 or 15 tons of good farmyard manure, should be trenched to the depth of 24 inches, the top soil being kept at the top and the bottom broken up and turned over. I am convinced that this costs about 1s. 6d. per square rod, or £3 for the rood, according to the tenacity of the soil, and is absolutely necessary, as I have found from experience that my plantations made in a soil which has been frequently trenched bear more abundantly, and give finer fruit, and are more healthy than those which I have planted in holes only without moving the surrounding soil. The rood of land trenched and fenced will be ready for the reception of the trees in November, the soil being pulverised and settled. Considerable expense having been incurred, I propose to show that the planter will be able to recoup himself by the number of trees he can plant and the consequent produce. The rood of land will accommodate about 400 trees—that is, 200 trees planted 9 feet apart row from row and 6 feet apart in the rows of Plums, Apples, and Pears, and 200 bushes of Currants and Gooseberries between at 6 feet apart in the rows. The rood, therefore, will contain as many Apples and Plums as two acres of the ordinary farm orchard, and enough bush fruits to pay all rent and expenses, and will be protected from all injury from stock and game, and without such protection it is useless to plant.

Sorts of Trees.—In my own district the Plum is the most valuable fruit I have, and it is not difficult to explain the reason of this superiority. The Plum, according to an analysis drawn out by Mr. Edmund Tonks of Birmingham, contains :—

59·21 potash.	15·10 phosphorus.
10·00 lime.	3·83 sulphur.
5·46 magnesia.	2·36 silicon.
3·20 iron.	

All of which constituents are largely present in my soil. It is one of the most valuable fruits of our domestic economy, it makes a delicious and nutritious preserve, and during the months of July, August, September, October, and even in November, it may be present daily on the dinner table either cooked or uncooked, and I believe that certain classes of the Germans almost exist on the fruit, such are its nourishing qualities. The sort which I plant the most extensively is the Early Rivers or Early Prolific; this was raised by my father some fifty years since, and in the most disastrous seasons I have never known it completely fail. I believe this immunity to be owing to the fact that from its precocity (as I have known the whole crop gathered by the 5th August) the tree has time to recover its strength in the period of nearly eight months which elapses between the gathering and the next season's blooming. The density of the fruit is very great, as it weighs 70 lbs. to the bushel. This is against the producer, and it ought to be sold by weight. I believe that as a dried fruit it will fully equal the dried French Plums. Close to the gathering of the Early Prolific I have the Czar, a large purple blue Plum of abundant fertility; then the Sultan, and at the end of September Prince Englebert and Pond's Seedling; and beginning of October the Monarch, Archduke, and Grand Duke. I have discarded the Diamond, Reine Claude de Bavay, Reine Claude d'Oullins, Belgian Purple, as too uncertain for market Plums. For the farm orchard the interval between the Sultan and Pond's Seedling should be filled up by the Victoria, Green Gage, Gisborne's, and the Pershore, all of which are well-known market Plums, and are equally suitable for cooking, preserving, and drying, and I hope one day to see the grocers' shops continually supplied with these Plums of British manufacture. The Cluster Damson, well known for its enormous fertility; the Prune and Shropshire Damsons are also very important fruits which should find a place. The sort of tree to be planted should be what are usually called two or three years unpruned standards, the younger the better, as the transplanting causes little injury to young trees. I may here mention that the Early Rivers does not prosper in my soil when grafted on the Mussel stock. The future health of a plantation depends very much on the stocks used, and it is therefore necessary to be particular on this head.

The fruit which stands most in national importance is of course the Apple, and it seems strange that we should allow foreign nations to usurp our position in the supply of this very necessary want. In the 200 trees required for the rood I should apportion 100 Apple trees, and for a continual supply of culinary fruit Keswick Codlin, Duchess of Oldenburg, Lord Suffield, Stirling Castle, Worcester Pearmain, Manks Codlin, Ecklinville Seedling, Lord Grosvenor, Warner's King, Blenheim Orange, Baxter's Pearmain, Lady Henniker, Tower of Glamis, Betty Geeson, Dumelow's Seedling, will last from August to the end of April; of dessert Apples, Red Juneating, Irish Peach, Summer Golden Pippin, Devonshire Quarrenden, Williams' Favourite, Ribston Pippin, Cox's Orange Pippin, King of the Pippins, Blenheim Orange, Mannington's Pearmain, Lord Burghley, Sturmer Pippin, Allen's Everlasting will give a supply from June to May. On the Paradise stock all these Apples will form fruitful and profitable bushes and are all marketable Apples, and in my opinion are very much better than any Baldwins or Newtown Pippins. Some of these kinds, such as the Manks Codlin and Stirling Castle, can be planted 6 feet apart. Worked on the Crab stock, they are so fertile that they are soon dwarfed by the production of fruit. As with Plums, I should recommend trees of two or three years old being planted. Of Apples of recent introduction I have not found Mr. Gladstone so good as it was represented. It is not earlier than the Juneating, is very unequal in size, and has the unpleasant habit of being in a constant perspiration. Lady Henniker is a large and fine Apple. Peasgood's Nonesuch is very handsome and large, but does not bear so freely in my soil as the Apples I have named. The stock English Apple, the Blenheim Pippin, is a long time coming into bearing, but when fruitful always commands a high price; this and the Dumelows' Seedling would, no doubt, be valuable for cutting into chips and rings.

The analysis of the Apple differs from the Plum. There are present: —

Potash	35·68	Iron	1·40
Soda	26·09	Phosphorus	13·59
Lime	4·08	Sulphur	6·09
Magnesia	8·75	Silica	4·32

The Pear is the next in rank as an industrial fruit, but it by no means equals the Apple or the Plum in importance; indeed, during a great part of the year it is seen only on the tables of the wealthy. I have, however, had a considerable experience of Pears as standard trees. Within my recollection I have seen planted and destroyed the following sorts:—Summer Bergamot, Lammas, Passans du Portugal, Windsor, Williams' Bon Chrêtien, Dunmore, B. d'Amanlis, Marie Louise, Louise Bonne of Jersey, Winter Crassanne, Beurré de Capiaumont, Beurré Bosc, Comte de Lamy, Hessle, and Spring Beurré, none of which ever paid the rent of the ground they occupied. I have, however, raised three sorts of Pears which will reverse this position. These are

the Beacon, ripening the end of August and beginning of September, which is so fertile that grafted on the Pear stock it may be planted at the same distance as the Plum and the Apple ; the Fertility, which is equally fertile either on the Pear or Quince ; and the Conference, which is not yet introduced to the public. The two former are already well known. Of recent foreign Pears which are hardy, Madame Treyve, Souvenir du Congrès, Marie Louise d'Uccle, and Emile d'Heyst are marketable sorts ; of baking Pears the Catillac is probably the best. The Pear differs in analysis from the Plum and Apple. It contains :—

Potash	54·69	Iron	1·04
Soda	8·52	Phosphorus	15·20
Lime	7·98	Sulphur	5·69
Magnesia	5·22	Silicon	1·49

The best class of tree for planting is the two and three years old on the Quince stock, excepting the Souvenir du Congrès and the Beacon, which should either be double grafted or on the Pear stock.

The Morello Cherry on the Mahaleb stock makes a very prolific bush. Grown in this way or trained to iron wires it may be easily protected with netting. Between the rows of pyramid or half-standard trees Currants and Gooseberries can be planted without in any degree injuring their produce, care being taken to return to the soil by chemical manure the constituents of which it is deprived by the growth and fruitfulness of the trees. By attention and occasional analysis there will be no more difficulty in doing this than in providing for the ordinary farm crops.

Pruning.—In a farm orchard it is not necessary to prune trees severely. Pears and Apples in unfruitful seasons should have the shoots stopped in June, and should be occasionally examined and the inner growth lightened to let in the sun and air. About the end of September the shoot made after the first pruning should be shortened to four or five buds. As soon as the trees are fruitful very little pruning is required. Plum trees require as little pruning as possible, but all gross shoots should be removed when observed. The sorts of Plums I have named fruit so early that they do not grow into very large trees. In these garden orchards it is not well to allow the trees to grow to more than 10 to 12 feet. Avoid the use of long ladders as much as possible, and the consequent expense and delay in picking, which ought to be done by women and boys.

Drying.—It is lamentable to hear of the shameful waste undergone when we have what is called a glut of fruit, and we shall hear no doubt in another paper of the proper means to be taken to prevent this loss. I have heard of tons of Plums in Worcestershire rotting because of the excess. There is no doubt that all this material could be saved and turned into food. The Persian shepherd goes out to his work provided with a bag of dried Peaches, which are so hard that he chastises his dogs, with them. The dried Misch Misch Apricot is a staple caravan food made into cakes and carried in a small compass. We pay a large sum to the French for dried Plums, and the ladies in Portuguese convents are properly employed in preserving the delicious Guimaraens Plums. The absence of sun is no excuse for our being so backward in these matters. We can and do ripen Grapes as well as the hot sun of Spain, and artificial help will serve us as well for drying fruit as for ripening Grapes.

The disastrous malady termed canker may be much alleviated by attention to the soil constituents, and in a paper read at Birmingham Mr. Tonks stated that he had removed the disease by the application of chemical manures, potash being the principal ingredient. The trees in my soil are almost entirely free from the disease, and this immunity is probably owing to the abundance of potash, which should be returned to the soil at every opportunity. The dressing applied by Mr. Tonks consists of nearly equal quantities of superphosphate of lime, nitrate of potash, nitrate of soda, and sulphate of lime. Although pruning may be carried to excess it must not be neglected, as it is desirable to grow fruit and not wood. It can be seen by measurement that much room is wasted by profitless and barren shoots. With judicious pruning this need not occur.

The Royal Agricultural Society has, for the first time, offered prizes for preparations of fruit next year. It has been a long time recognising the fact that land produces other necessaries than corn and cattle. We fruit growers have done very well without this recognition, which has come a little late in the day. It is, however, a step in the right direction. The advance of pomology during the last thirty years has been quite as rapid as the advance of agriculture, and we may be certain that there is no finality. Fruit-growing, I beg leave to state, is not the handmaid, but the helpmeet of agriculture, and I believe the best interests of the land would be served if landlords and tenants would meet to discuss the conditions under which they can advance the cultivation of fruit to their mutual advantage, and if these meetings were made public every village in England would be benefited ; in time competent advisers would be provided, and as the interests are national, it is hoped that means would be found of advancing money at a low rate of interest. There can, I think, be no fear of the supply overtaking the demand, and it is certain that foreign competition would not prevail against home-grown fruit if produced in sufficient quantity and of good quality.

The production of fruit under glass requires capital and skill, and although not national is, and will become, an industry of great importance. Nearly forty years since my father proved that the cultivation of Peaches and Nectarines could be carried on in unheated glass houses with a certainty of success unknown to wall culture. The orchard house has now become an established fact. For some time before this system had been in full work the only early Peaches—that is, those ripening in July—were the Early Nutmeg, the Early Ann, the Double de Troyes, all of them almost worthless except for precocity ; now, however, we have ripening the 1st July, the Alexander, an American Peach, closely followed by the Early Beatrice, Early Louise, Hales' Early, Rivers' Early York, ripening during a month in which thirty years ago there was not a Peach worth having. During the months of August, September, and part of October there can be grown a continuous series of Peaches. The advance in Nectarines is equally conspicuous, the Lord Napier beginning a supply of Nectarines of high quality in August, which other sorts continue until the end of September, and ceasing with the Victoria. With these varieties, which were certainly not available thirty years since, an orchard house will give a continuous supply of Peaches and Nectarines for four months ; a house 100 by 24 feet properly managed will produce over 3000 fruits of high quality. Such a house was built in 1855 at a cost of £147, and has produced for the last twenty-five years between 3000 and 4000 fruits annually. The cultivation of Grapes is advancing in our own islands with extraordinary rapidity, and although we hear complaints of the lowness of price, we do not hear that building Grape houses is declining, a good proof that no fear is entertained of the future prospects of Grape-growing.

Cold Storage.—The principle of cold storage is likely to be of very great importance in the future, and experiments are now being made with regard to the preservation of fruit under the influence of cold. Now I am convinced that if a low temperature cannot be usefully applied to keeping fruit, it may be made very useful for the storage of trees, particularly of Pear trees on the Quince stock. What I have to suggest is that Pear trees on the Quince stock may be placed in pots in a cold storage in a temperature not lower than 36° Fahr., and retarded until the middle of April. By this means the blooming season may be kept back until all danger from spring frosts is past. The fibrous roots of the Quince and the slow growth of the Pear render this class of fruit tree particularly suitable for this method ; and as large Pears are worth in November and the succeeding months from 6s. to 8s. per dozen, cold storage, if possible, and if room for trees can be provided, will give a handsome profit. I tried some few years since to find a system which I could employ, but I was then offered small receptacles like a miniature chest of drawers, when I wanted room for hundreds of trees. I was not then acquainted with the premises of cold storage in Leadenhall Market.

In Belgium it is customary to form clubs of fruit growers to compete at the various horticultural shows ; the combination of growers enables each man to choose his own particular fruit to show with his club. These contests are very interesting, and would, I think, if carried out in England, cause much friendly rivalry, and advance the interests of pomology. I have, I am afraid, set a bad example of exceeding the time allotted to the speakers, and, if so, I must ask to be forgiven, and conclude by saying I cannot, I am afraid, hold out any hopes of creating a large fortune by fruit-growing, but it is an investment and an occupation with a more or less certain income, which will become more certain with improved means of preservation.

PACKING FRUIT.

By Mr. J. Webber.

Ignorance displayed in packing and want of knowledge of the condition in which fruit should be sent to market are the principal causes of loss to the fruit grower in this country. In packing we are far behind our continental brethren, for while they study not only the condition most suitable for travelling, but even the package in which the fruit is to be sent, we frequently send it too ripe, and make use of any package that may come to hand, with little regard as to whether it is too deep or too shallow, or will hold such quantities as are ordinarily marketable.

Packing is such an important factor in the attainment of good prices for market produce that it ought to be one of the essential points in the

education of a gardener; for what is the use of growing the best fruit in the world if it be spoiled in transit? At least one-third of the hothouse fruit sent to market is depreciated in value, and sometimes rendered worthless, by bad packing; whereas, if all came in marketable condition the price would be lower to the consumer, the supply being larger, and a better result all round would accrue to the grower. Bearing this in mind, I beg to submit the following remarks as applying to London markets.

There are three golden rules to be observed in sending fruit to markets.

1st, Never send it too ripe. Peaches especially should be packed hard, as they travel better in that condition, and are rarely used by the shopkeeper till two or three days after purchase.

2nd, Never, if possible, send it for Saturday's market, as with the exception of Strawberries the retailer invariably provides himself beforehand with what he requires: Monday and Tuesday for the first part of the week, Wednesday and Thursday for the latter part. In hot weather, when fruit ripens fast, small consignments may be sent on Friday.

3rd, All fruit should be sorted into bests and seconds, and in some cases into thirds, as there are always buyers of bests, and buyers of seconds and thirds, but seldom buyers of mixed.

GRAPES.—Among hothouse fruits, Grapes being most important, as growing all the year round, claim our first attention. There are two sorts of baskets in which Grapes may be sent to market—viz., the "handle" and the "baby." The former is more useful for ordinary work and is safer, as the handle is used for lifting, and to a certain extent is a protection to the fruit in preventing other goods being placed on the top. A little packing should be placed in the bottom of the basket, then a lining of white paper. The bunches should be packed close together, shoulder upwards, and the basket tied over with a sheet of stiff paper with a label "Grapes with care" on it. Grapes packed this way will travel any distance. Special bunches travel in "handles," each bunch tied to the basket, without the centre being filled up. The latter mode is recommended in the case of special fruit only. The "baby" basket should only be used for short distances, and where a regular supply is sent, and where the railway porters are accustomed to them. It is more convenient than the "handle" for displaying in the shop windows, and shows off the fruit better. The basket should be lined with white paper and a little packing placed in the bottom, the bunches being simply laid in close together. The whole fits nicely into a hamper known as a "flat," and with the ordinary Grape label invariably arrives in good condition.

PEACHES should be packed in shallow boxes of sufficient depth to allow a good bed to lay upon and a slight layer of packing on the top. The box should contain only twenty-four best or thirty-six seconds. Each fruit should be wrapped in soft paper. A very effective way of packing Peaches, so as when the box is opened the class of fruit can be seen at once by the buyer, is to roll a double slip of tissue paper round each fruit, leaving the crown exposed. This requires a sheet of paper to be placed over the fruit before finally filling up with the packing. I know of no packing better than moss, which should be properly dried and cleansed from all grit. It is cooler and more elastic than any other substance. Each fruit should be completely surrounded with it. Next to moss is bran, but care should be taken to shake it down well and refill the box before fastening the lid, as it settles down with the oscillation of travelling, leaving part of the fruit exposed and liable to injury. Wadding is not elastic, and is too heating.

STRAWBERRIES should be packed in boxes in single layers containing from 1 lb. to 1½ lb., according to size, each Strawberry being placed in a Strawberry leaf on a thin layer of moss with only a light layer of leaves on the top. Each package of say five or six boxes should have a label "Strawberries with care, this side up" on the top of it. When the season is full on they lose value if delivered after 8 A.M., as the trade then supply themselves from the "morning gathered" delivered by the growers themselves.

TOMATOES should be packed in "handle" baskets containing from 18 to 20 lbs., and should be well coloured, but not too ripe, otherwise they are apt to split.

OUTDOOR FRUIT.—Suitable baskets for sending outdoor fruit to market can always be obtained of the salesmen. These consist of quarter sieves, half sieves, and sieves. The former hold 12 lbs., and are used for best samples of all kinds of soft fruit. Half sieves are used for Cherries, Currants, Plums, Pears, and Apples. Sieves are used mainly for Apples. A half sieve of soft fruit should contain 24 lbs., of Plums 28 lbs., of Apples from 21 to 24 lbs. Soft fruit should be simply tuck down with a sheet of paper. Hard fruit should be stuck down with dry packing, such as hay or straw. All fruit opens better with sheet of paper covered over.

PEARS, especially early varieties, should be sent directly they can be removed from the trees. On no account should they be allowed to get ripe. The system in vogue in France is well worthy of imitation by growers in this country. The fruit is carefully sorted, in many instances into four sizes. Cases are made to contain two tiers, each tier consisting of twenty, twenty-four, thirty, and thirty-six fruits. A layer of paper shavings is placed between each tier, and one top and bottom. When the fruit is extra large and kept late in the season, cases to contain a single layer of twelve and fifteen are used. If packed in half sieves, the better sorts should be placed in layers with a little packing between.

CARRIAGE.—With regard to the cost of carriage little can be said here except that the rates, as we all know, are very unsatisfactory, little or no inducement being held out by the great carriers for the development of produce on a small scale. Special rates may sometimes be secured for regular consignments over 28 lbs., but even then there is often a difficulty in keeping the railway company to their contract. All goods by passenger trains should reach the markets by 7 P.M., so as to be ready for the next morning's trade, as if not they are seldom delivered till after the market is over, and therefore lose in value.

PACKING, CARRIAGE, AND MARKETING OF FRUITS.

BY MR. SAMUEL RAWSON.

I HAVE been asked to give my views on the subject of the packing, carriage, and marketing of fruits, and as I have had many years' experience in the business, I have jotted down a few hints which I hope may lead to consideration by those who are most interested in the subject—that is, the growers of fruit. Anyone can grow fruit if he have the trees, the land, and the climate; but it is not everyone who can make the best price of it by judicious marketing, as there is much art in that. There are the picking and the packing, as well as the choice of a market and a salesman. We are all aware of the old adage, "Put the best side towards London," and know pretty well what "toppers" mean; but you may depend upon it that it is very unfair to the salesman and the customer in town to top or face the baskets of produce sent to market with a few of the best fruit, to cover the idleness or carelessness in picking. This is often the reason of many complaints of certain growers receiving bad prices, as shopkeepers, if once bit, will be very shy of buying that grower's produce again, unless at such prices as will make them some recompense for their loss on their former outlay.

In France they manage much better. Perhaps it may be said their dwarf pyramid trees, and their cordon system of growing, facilitates the picking, as there is no climbing or shaking of trees, no dropping of fruit by the moving of ladders. This I admit is a great advantage, and the fruit must be freer from bruises than ours; but does the English fruit grower ever trouble whether the fruit is bruised or not? I say no; he does not. In nine cases out of ten all he cares about is getting it off the trees and sent to market, and in many cases without even studying whether this or that sort ought to be sent first. The Frenchman does not do this. He carefully hand-picks and selects the finest of his fruit, and places it separately, either on racks specially fitted round his fruit room, or lays it thinly on straw apart from the main crops, which he offers for sale first, and, should the market prove to be brisk he will often sort his fruit two or three times, leaving only the very smallest to be sold in large packages. The others are made up in small packages marked with the number of fruit and initials of the packer. Thus one grower's packing will make double the price of another's, if his mark has become known as an honest packer; but in cases of small growers, or people who want cash at harvest time, and cannot afford to store fruit, their produce is sent into the towns. The French fruit-grower studies how he can improve his fruit produce by planting sorts that command a sale; then, by adopting small packages, and by often realising more for 1 ton of fruit than we do for 2 tons of ours. Why is this? The French do not begrudge employing labour, while the English grower growls and grumbles if he employs a few extra hands. I say labour will and must pay, and farmers would do better by employing more labour. I give you an instance.

I was in Cornwall, I think it is three seasons ago. A grower was about to send me some Apples for sale. They were early Apples, I think about a ton of Keswick Codlins and half a ton of Quarrendens. I was grieved when I saw him packing them, for both kinds were really fine clear fruit. I said, "Why did you not hand-pick these fine Codlins?" "Oh!" he said, "it wo'n't pay; I have not time." I said, "Why did you pick the Quarrendens?" He said, "Because we could

not shake them." He was packing them in large, rough-looking, oval baskets, the class of basket generally used in that part to hold 80 or 100 lbs. He was using neither straw nor paper at the bottom to prevent the twigs of the baskets bruising the Apples. I told him that they would make more than double the price if they had been picked and were packed in smaller baskets, and advised him to go to Penzance and buy a lot of small baskets, such as are used in picking the fruit from the ground to carry to the barns. He said he would not go to the expense. I therefore told him if he would name a price for the Quarrendens I would buy them. He named a price that had been returned to him that morning for some similarly packed and sent to another market. I consequently bought the fruit, obtained some smaller baskets, had lids made for them, and packed the twelve baskets I bought from him into thirty-six of the small baskets, making thirty baskets of selected fruit and six baskets of seconds. Now the result was astonishing. I had twelve baskets sent from a neighbour of his the same day, and the thirty baskets that I had packed out of the twelve baskets made just double the price of the twelve baskets his neighbour consigned to me packed in the Cornish fashion. I thus made double the price for my trouble, with six baskets seconds to the good.

The way Strawberries are packed from that district is abominable. Though they grow good and early fruit, they are spoiled before they get to market, being packed in pound punnets, wedged into an old Orange box with a little fern between each layer. I cannot understand what this fern is for, unless it is to cook them before they come to market; for after a twelve-hours journey in one of those covered iron trucks that has become nearly red hot, after standing in the hot Cornish sun all day waiting for its freight, then to be filled with fruit that has been picked during the day, and closed up for a long ride to London or Birmingham. This fern is admirably adapted for sweating the fruit. I have used it myself for sweating and ripening fruit, but that fruit has been of the nature of hard Pears or Plums that I wanted to get up to colour. I should think Strawberries are quite ripe enough without sweating; besides, it so alters the colour and taste, and makes it so awkward for the shopkeepers to put them into paper bags, or make a parcel of one of these punnets for a customer to carry home, the juice being so liable to run on the clothing of the purchaser. My opinion is that Strawberries ought to be sent to market on wooden trays, about 3 inches deep, 2 feet long, about 15 inches wide, made to fit into each other in nests of six, with nothing over them except a lid on the top box; these trays to hold 12 lbs. They can be carried about the beds, there being a hole at each end for the handle, and to admit air, the whole six being bound by a cord; thus six dozen could be sold together. The shopkeeper could pay the salesman a deposit of 6d. each on the trays, and the shopkeeper could place the trays in his window or on his stall without necessitating his turning them out and bruising them. None but the finest fruit (unless in a scarce season) should be put in these trays. Each picker should have two vessels to pick in, one for fruit for shopkeepers, and one for jam makers or hawkers; and when Strawberries are picked free from stalk they should be put in tubs, as I have seen them sent to market ready picked in 12 lb. baskets, and a sorry plight are they in when they arrive in a provincial town, besides the loss in weight, some baskets losing as much as 3 and 4 lbs. each.

With respect to marketing, I think with extended fruit cultivation we shall want extended marketing, distribution, or manipulation, or whatever you like to call it, but it simply means the fruit grown must be disposed of in the most economical way to bring a profit to the grower. Salesmen will have to be provided with very large capital, and the convenience for preserving the fruit and vegetables in super-abundant seasons, by converting the fruit into jam or pulp, or preserving the vegetables in brine, to provide against scarcity in crops for another season; besides, the surplus of each day's sales must be manufactured into jam, pulp, or pickles, thus keeping the market clear, and preventing goods being sold at those ruinously low prices that are obtained at the end of the market, which disheartens the grower and damages the shopkeeper, who has given a fair price at early market. Now, in many cases the salesman has not the capital or the convenience to carry out this system and thus prevent a glut; if he had that would be no benefit to the grower, as the profits would go into his pocket, and he would get a commission of 5 or 7½ per cent. on the raw fruit for selling to his own jam factory, and 25 to 50 per cent. more on the manufactured jam or pulp. My opinion is that it is to the manipulation of this surplus that the growers in an extended fruit cultivation must look for the profit they will reap for their trouble, and I should advise fruit associations or companies, supported by capitalists or growers who can act as their own salesmen, and to whom large jam makers can apply for their supplies of fruit. This would be a great boon and a great saving to large jam boilers.

I think there is but one way of dealing with the produce with the most advantage to the seller, and to the immediate benefit of the people generally, and that is by a combination of the landowners, farmers, market gardeners, fruit and vegetable growers, agricultural labourers, and all classes interested, to form companies or societies properly and carefully organised and carried on in large centres, to provide for the reception and sale of produce, so that all classes may be interested in the success of such undertakings; so that sellers may depend upon having, without delay, the fair market value of the goods sent for sale; so that they may depend upon a sale of their goods at such prices with certainty, at the same time having an interest in a well paying company, out of the profits of which they would be reimbursed most of the expenses of selling their produce for the year.

To make such a company successful in any large centre is easy. It may be formed amongst capitalists, as companies generally are formed, or it may be the parties specifically interested who may combine to start and support it. The latter, I think, would be the more profitable combination, as it certainly would be the more preferable, and in such a case I think it should be a company co-operative in principle, registered under the Companies Acts, limiting the liability of the shareholders to the amount of their shares, and the capital should be of such an extent as to create confidence in the whole community of senders, whether shareholders or not; and it should admit of taking premises, or building if necessary, and acquiring plant of such an extent and nature as to stamp the company "respectable" and stable, and so as to attract the consumer. The shares issued should be so varied in amount as to enable and induce all classes to become shareholders. Under the present system senders of produce have only the salesmen's returns to depend upon, and they have no means of verifying them. In order to insure a sale of sender's goods at market prices the company might take a number of shops in different parts of the town, to which might be sent fruit, vegetables, poultry, game, or produce of any description, including meat if necessary, and provide a means for disposing of goods which could not be sold at the central depôt at fair market prices. The company would also be able to buy fruit and vegetables when the markets were full from other salesmen, thus providing for seasons when particular crops failed, or of which the prices ran high, and so be independent of the markets as a means of supply, without being crippled for want of any particular sort of fruit or vegetable for the season. As an instance of the inconvenience and loss occasioned by being placed in such a position I may mention a circumstance that came to my knowledge in February, 1885, when Broccoli was plentiful—so prolific the yield that it did not pay to send to market. In October of the same year one firm of pickle makers were compelled to pay 2s. 6d. and 3s. per dozen for Cauliflower which they might have bought for 6d. to 9d. per dozen in the early part of the year, and to keep their trade together they bought hundreds of dozens. Another advantage might be given to senders of goods for sale. If a quantity of goods were actually consigned and viewed by the company's agent in any town, on production of the consignment note, an immediate advance might be made to the sender.

It has been pointed out to me that to do all this would require an immense amount of capital, and that it would be next to impossible to work a company so extensive in its operations. To those who have not carefully considered the subject it may so present itself, but the difficulties are few, and none that cannot be met by systematic management. Its machinery would not be nearly so complicated as that of the Civil Service Supply Association, for instance, nor would the capital employed be required in it, or the amount of stock to be held at any one time ever approach in magnitude for any one district to that of the Association referred to. As to the commission business, beyond the initial outlay this department would not absorb capital, as the moment business was commenced the earnings in it would begin to accrue, and, receiving goods on commission only, there would be no outlay excepting for current expenses, whilst there would always be capital at the company's bankers. When goods were received and sold the proceeds would go into the bank, and assuming that all accounts were made up on the day of sale and crossed cheques sent to senders the same night they would not, as a rule, be presented until two days afterwards, and frequently three or four days, by which time more goods would have been received and sold, and the money paid into the bank as before. The company would thus have the benefit of senders' capital, at the same time settling their accounts with the greatest celerity. The greatest importance attaches to prompt settlements in this business. As generally conducted by private salesmen the returns are made and the cash remitted weekly,

but there is no reason why it should not be sent at once, as it is often of importance to the sender that he should have his money, and, as the trade is for cash, there can be no reasonable excuse for not doing so. The cost of keeping horses, carts, and men would be more than saved by the company being their own carters from the railway stations, as the railway companies charge 2s. per ton for "cartage," and in the course of a year in an extensive business this charge amounts to a large sum.

IMPROVING ORCHARDS BY GRAFTING.

By Mr. J. Miller

Where old fruit trees that are healthy and full of vigour are worthless for the market in a monetary sense, no time should be lost in grafting upon them new heads of an improved variety.

If the system of stock-grafting was better understood, especially out of the fruit-growing districts, worthless sorts would seldom be seen in the market, their place being taken by more profitable fruit. But to expect this is to be done by the tenant, upon a yearly tenancy, is out of the question. To meet the difficulty to a certain extent, industrious tenants should be supplied with trees from the home nursery, or could be supplied by the trade at small cost, the tenant being under an agreement to protect them. Stock-grafting is easily done, but the system requires to be known. As done in the fruit districts by local grafters, each workman bears a degree of merit as to his success. When once known, none need be afraid to cut off the third part of a worthless tree any time during the winter months, cutting it ship-shape in order that the grafter has little to do when the season comes but to square the ends of the branches and insert his grafts. The season for grafting large trees is rather an unsettled question. I may state that we had great success last year at Ruxley Lodge in grafting old trees, and the strong shoots which I exhibit speak well for the system. The heads were cut off the trees in the month of February, and grafts were secured about the same time and laid by the heels in a shady place to prevent any premature growth. The grafts for this require to be clean and free from American blight and canker, from two to three years' growth, and in size about the thickness of one's second finger. The specimens of shoots which I produce were simply short grafts a year ago last May, the whole of the grafting being done in the last fortnight of the month. The work has only been done about sixteen months, yet the shoots have had two seasons' growth, and reach nearly 10 feet in length; some of the stronger sorts are even longer. Upon a close examination some of the strongest shoots may be seen to be showing fruit buds, and if we should be favoured with a fruitful season next year I have no doubt, from present appearances, we shall have a fair show of fruit. Stock-grafting does not require to be commenced so soon as small whip or tongue grafting. The general order is—Cherries first, Plums next, finishing up with Pears and Apples.

The tools which are required for the purpose are but few—a pocket knife, a shoemaker's knife, a tenon saw, and a small mallet.

A branch 2 inches in diameter requires two grafts to thoroughly unite the end of the branch; one of 4 inches, three grafts; and so on in proportion. A stock or head of 9 inches requires seven grafts in order to keep the head living until the leading shoots form the new tree, then all weakly and ill-placed shoots can be cut away. There is no particular secret in manipulating the end of the branch to receive the grafts further than shaving away a portion of the rough bark, so that it may better match the thin or inner bark of the scion, which ought to be placed so as to accurately face each other. Daubing or claying up the grafts is no doubt of some importance, especially for small grafting. For trees grafted upon the stock principle the daubing material may be of a coarser nature than for the whip or tongue grafting. Good clay with a proportion of tough hay, well compounded together, and thoroughly worked in and round the grafts to prevent its being washed off by the weather, is all that is required for stock-grafting. I may here state that heading the trees at the proper time and securing and properly keeping the grafts is of quite as much importance as carrying out the work.

*** We did not receive the papers of Messrs. Bath, Smith, and Beach.

DISCUSSION.

Mr. A. Dean, in proposing a vote of thanks to the readers of the papers, condemned the extravagant statements at a recent provincial meeting as misleading, and said that agriculturists should not be induced to plant extensively at once, but rather a few acres now and more later on as experience was gained and demand increased. It was regretable, he thought, that so much land was occupied with cider Apples when the same space would give a much better return if occupied with good market varieties. Mr. A. H. Pearson, in seconding the vote of thanks, considered one great mistake into which many cultivators fall is rushing the fruit all to one centre. He grew 80 acres of Apples and found a convenient market for them in Nottingham. He thought growers might often find a better market near at home. Mr. J. K. Fowler referred to fruit-preserving, and said that this should now receive more attention than jam-making, as a great field was open in that direction. Mr. Peter Veitch of Exeter remarked that though cider Apples had been condemned, it should be remembered that they mostly grew upon comparatively poor land quite unsuited to the culture of better varieties. Mr. Reed, Oatlands Park Gardens, Weybridge, considered pyramidal trees the most profitable, and advocated a more general adoption of root-pruning. He said the numerous old neglected fruit trees seen throughout the country should be destroyed, cordon, espalier, or pyramids of good varieties being planted instead, which would materially alter the returns, and alter many persons' opinion of the advantages derivable from fruit cultivation. Mr. H. James of Norwood regretted that so much land was unoccupied or uncultivated, which, if let at reasonable rents, could be rendered profitable to landlord and tenant. Mr. D. T. Fish hoped all would carefully consider the weighty remarks of their Chairman, and he also hoped that Mr. Rivers would be able to supplement his list of the best fruits for good land with a selection of the best to grow on poor or second-rate soils. Mr. G. Bunyard said with regard to analysing soils this could be readily done when they were of a uniform character, but when as varied as they were in the neighbourhood of Maidstone, it was a difficult undertaking. Much could be done to renovate old orchards by judicious applications of manure, and by giving more than is usual. Pruning should be done when the trees are in leaf, as it could be more readily seen what should be removed and what retained with benefit to the tree.

The vote of thanks was carried unanimously, and the meeting adjourned until the next day.

On Saturday, September 8th, Mr. T. F. Rivers took the chair at 2 P.M., when there was again a good attendance of growers. The principal paper was that by Mr. Tallerman on the "Science of Fruit Distribution," which was followed by one on "Fruit as Food," from Mr. Manning.

THE SCIENCE OF FRUIT DISTRIBUTION.

By D. Tallerman, Esq., K.F.J.

Of the various means available to fruit growers for the disposal of their crops, that by which they can be brought within the reach of consumers in a full flavoured, fresh, and bright condition is the one which will leave the most profitable results to the producers, and lead to the most successful permanent development of the industry in which they are engaged. Fruit may be preserved, pulped, evaporated, refrigerated, or manipulated in any other manner that will enable it to be converted into a merchantable commodity possessing a distinctive cash value, but there yet remains the undeniable fact that it is in its fresh ripe condition, while clothed with its undisguisable natural bloom, endowed with its fragrant aroma and luscious flavour, that fruits have their highest and best values; therefore the most important subject that can occupy the minds of fruit growers is, how they can best place their produce within reach of consumers in that inviting condition, in order to acquire the full benefits that accrue from it. This subject naturally involves a consideration of the means of rapid and effective distribution which are absolutely essential to secure successful results.

The science of fruit distribution is necessarily a commercial study, and comprises the principles that growers should practise to place their produce within reach of consumers.

1st, When and where they may be required.

2nd, In the best possible condition.

3rd, At the least possible cost.

The means by which these measures, simple as they appear, can best be successfully attained, involves attention to matters of detail, the necessity of which will be readily acknowledged by all engaged in fruit growing and marketing; but to ensure a beneficial result from the consideration of the subjects which we are assembled to discuss, it is necessary to treat the various branches of the trade from specific and not general points, inasmuch as although the general condition of the subject may be speedily summarised, that will not bring us any nearer the position we hope to reach. Briefly, then, we are a large community existing in a small space. Fruit consumers abound in all directions, fruit producers are to be found but in few places. The consumers are counted by millions, the producers by hundreds. The consumers require all the fruit that is grown and more; the growers do

not profitably sell while fresh the yield of their orchards, and are driven to seek other outlets in order to secure even a nominal return for their crops. It must be borne in mind that the circumstances and conditions that surround individual growers and consumers vary very largely, and courses of procedure that would bring advantageous results in one direction would be inappreciable in another.

With growers we have a wide range of conditions to deal with, from the owners of the numerous old orchards of large acreage to which little or no attention is given, to the cultivators of small quantities of choice fruits under glass or in the hothouse, which are the subject of incessant care and watchfulness.

With consumers we also have an infinite number of conditions which embodies a still wider range of thought, for from the wealthy members of the upper classes who require, and will have at all times if procurable, for their tables regardless of cost, any fruits that may be rare, choice, and of fine quality, to the buxom matron who buys a couple of pounds of whatever fruit the costermonger may have on his barrow, so that her husband's and family's dinner may be complete with its dumpling or pie. Every variety of condition has to be met with and provided for, therefore it must be evident that the more these existing and varied circumstances are understood, and the nearer they can be met and provided for, the greater must be the benefits that will accrue to fruit producers. It is in the study of the numerous features that present themselves, and the determination of the most advantageous manner in which they can be encountered and dealt with, that comprises the science of fruit distribution. This opportunity does not enable me to enlarge upon the whole of the subjects which are naturally affiliated with the question, therefore I content myself by indicating the directions to which attention may be advantageously given.

With respect to the first point—viz., the disposal of fruits, when and where they may be required. I would point out to growers that with the exception of the county of Kent and the Metropolis, the centres of fruit production and fruit consumption are not contiguous to each other. By an inspection of the diagram of the kingdom, showing the population and the fruit area of each county, it will be seen that the bulk of our fruit supply is produced in a very few districts, while a large portion of the country which is densely populated is devoid of any fruit produce of their own locality but rely upon other districts, and that the people gladly purchase any quantity of fruit that may be brought to them in good order and condition. That this position is undeniable may be gathered from the results that have attended the efforts of a few private parties who have relinquished the old practice of sending to the markets of Covent Garden, the Borough, and Spitalfields, and despatch their fruits instead to Manchester, Bradford, Leeds, Glasgow, and other largely populated northern towns, where they have made a profitable outlet for a large quantity of fruit that otherwise would have helped to glut the London markets. There are an enormous number of small towns in the mining and manufacturing districts that would welcome a supply of fresh fruit which they do not now obtain. In order to directly meet the requirements of these towns it is desirable that the fruit growers of each district combine with each other and organise themselves into local societies in order that they may be in a proper position to ascertain what fruits they have to sell, when they will be ready for gathering, and then ascertain the requirements of particular districts and what they are likely to buy, so as to enable them to take steps to supply them. It is not possible to attain this position by individual action, for no single grower could supply from his own crops the particular requirements of the traders of a town, but these requirements if once ascertained, which they may be in a general sense, could be furnished from the crops of several growers.

Where local organisations are thus formed they could readily communicate with the central organisation that has been formed to place itself in communication with the traders of all districts, in order to simplify the distribution of food products, and they by ascertaining the probable fruit requirements of a district, and having a knowledge of the crops of fruit that were available in many localities, could arrange to dispose of and deliver them direct from the orchards. The defect that fruit-growers suffer from arises from the fact that while their transactions are naturally of an individual character, and must remain so, they have had no recognised central representative organisation who could collect information from varied districts as to their possible fruit requirements, and disseminate the knowledge among those who had the fruit to dispose of, and also arrange many other subjects of interest and importance, such as packages, railway rates, transmission, &c., all matters small in themselves and readily adjustable, but each of which forms an indispensable connecting link in a commercial chain, without which a transaction cannot be carried through. Hitherto fruit growers have left everything with their salesmen, whose interest it is to collect and retain all the information, and to obstruct any course by which the consignment of the fruit to themselves would be interfered with. They therefore have a vested interest in obstructing any movement that would have a tendency to impart to growers any information that would advise them when and where fruit was required, which is the keystone to the system of direct distribution.

The second prominent feature incidental to scientific distribution is the delivery to consumers just what they want in the best possible condition. The interests of sellers will be considerably advanced by full attention being given to this subject, which presents many features requiring careful consideration and forethought, that without in any way adding to the costs of cultivation and delivery may materially aid to increase the amounts receivable for the fruits.

Be it remembered that no fruits grow exactly all alike, the same as bricks are made, but every tree or bush will contain some fruits of a more or less choice character. Wherever these can be selected they will if packed by themselves realise a much larger proportionate price without interfering with the price of the whole crop. There are different classes of buyers in all perishable food products, and more especially in fruits, and there are different members in each trade who supply the requirements of buyers. Anyone going into an average sized orchard when the fruit is ripe and ready for gathering will, upon examination, discover choice specimens fit for an exhibition or the window of the highest class fruiterers at the West End of London. Other fruits may be seen that, by themselves, would furnish a reasonable supply of more than a general character. Further, there will be seen the remainder of the growth suitable for the costermonger's barrow or the jam pot. If they remain while the fruit is gathered they will see it all packed together in such a way that no regard is paid to the choice specimens of fruit that may be there, but they are so dealt with that they will all find their way to one destination, which, as likely as not, may be the costermonger's barrow. This is the mistake that growers make, and where they unknowingly suffer material loss.

The disposal of green fruits is necessarily a matter of commercial experience, and to attain best results all fruits should be properly assorted and classed as to character, condition, and description—this in America is called "grading." Fruits thus dealt with and placed in packages of a uniform size enjoy a marked advantage in their disposal, as buyers at a distance may order them by description, while at present they can only be purchased by personal attendance and sight. The South of Ireland and the North of Scotland furnish examples of the great value attaching to the proper classification of perishable produce, for it is to the independent branding of butter at Cork and herrings at Wick and the other Scotch fishing ports, that have brought the trades of those districts to their present high stage of development, for it is owing to the facility which the storekeeper in the colonial bush can send to his merchant in London for what he requires in Cork butter, either in firsts, second, thirds, or fourths, knowing exactly what he will get, and can learn the current market price on the day of purchase. Equally the same the grocer of an inland town in eastern Europe can send to his Hamburgh agent for so many barrels of Scotch herrings, and can order "Crown Fulls," "Spents," or "Matties," and his exact requirements are supplied owing to the wise precautions those in the Scotch herring trade have adopted, by which not only are the character of the contents of their barrels known by description all over the world, but the single fisherman with his few barrels of herrings enjoys an equal position with the largest factor of the district, and can readily obtain the market price of the day for his small supply when they have once been examined and branded by the appointed officials. This should show fruit growers the advisability of their combining for the purpose of establishing a definite basis upon which their produce should be classed and uniformly packed, by which the contents of a package would be known to wholesale and retail dealers without a personal inspection. For this purpose fruits should be properly sorted and classed as to character and condition into—

1st, "Choice," for special high-class trade; "Prime," for first-class trade; and "Ordinary," for general trade.

2nd, Assorted as to description into firsts, seconds, and thirds sizes.

3rd, Choice and Prime fruits should be packed into clean, bright, and carefully made packages, so as to present to the buyer a luscious, attractive, and tempting appearance. Ordinary fruit may be packed for general sale in smaller baskets than at present.

4th, It is important to act on the principle that the smaller the package the wider the area of consumption, and the better the contents will keep in good order and condition.

5th, Also that selection as to size and colour with regular packing

are the best means for ensuring speedy sales in extended districts at good prices.

6th, Growers should remember and act on the fact that a barely perceptible taint or speck that is carelessly dealt with by the packer at the farm will in a short time become an odious blemish, and by the time the fruit reaches the market, not only becomes spoiled itself, but damages other fruit and spoils its value.

7th, A good crop requires marketing with commercial experience and judgment. A combination of growers to amalgamate their crops in order that large selections of particular descriptions may be made available for disposal in special directions, and in districts where required, will lead to larger prices being received.

8th, Specially choice goods, suitably packed for display in retailers' shop windows, will at all times command extreme high prices.

9th, Inferior specimens of fruits packed with prime specimens, reduce the value of the prime.

10th, Goods packed, branded, and numbered that their contents and condition may be known without a personal inspection, will be sent for by purchasers in remote parts, whose convenience or ability does not allow them to attend a market personally.

The simplicity, ease, and readiness by which these apparently complicated measures may be speedily carried into active existence will be promptly seen by a glance at a package that has been devised for the purpose, which lends itself in every way to the proposed condition of things, for inexpensive in production it is effective in character, as by its means fruits may be classed, packed, and safely transmitted to any part of the kingdom in large or small quantities, where they will arrive in better condition, and remain so longer than if packed in bulk as at present, also may be disposed of to the individual consumer without any handling and consequent deterioration. The inexpensive character of the package is its valuable feature, and that is 6d. per dozen for the boxes and 5d. for the crate to hold twenty boxes. Their lightness renders the cost of transport less than in the heavy baskets, which have to be sent backwards and forwards, while fruits selected and packed in this manner would be deliverable in the best possible condition and of the highest value. Thus the second material feature in the science of distribution would be complied with.

The third feature to which attention may be directed is the transport of fruit at the least possible cost. I do not propose to occupy time by referring to that great evil, the excessive railway rates, which the producers and consumers of the country have so long suffered from. The short-sighted policy of the railway authorities is about to be brought under consideration, and our purpose will be best served by attention being directed to the particular points that fruit growers should endeavour to secure for themselves in the forthcoming revision of the charges and conditions of our railway system. In this matter, so far as fruit is concerned, facilities for its effective collection, safe transport, and speedy delivery, are of a much greater consideration than the actual charge made for the services rendered, but this should certainly be a figure within reason; but the principal object that the agricultural classes generally, as a body of producers, should seek to obtain, is a ready means for reaching consumers in all districts through the existing retail traders. For this purpose they should seek for the establishment of a "farm produce train," a service to be carried through on the lines of the "parliamentary train" and the "van train," which was in existence for a number of years, and only recently abandoned. By the parliamentary train the passenger rates for one train daily was fixed by law. The van train was for parcels, and the rates were made by the railway companies themselves, being one-half the ordinary parcels rates. With a minimum of 6d. at the present time, a parcel traffic is in existence on all railways by passenger trains, and this is governed by radius of distance; up to thirty miles being ¼d. per lb.; up to fifty miles ½d. per lb.; up to 100 miles, ¾d. per lb., with a minimum rate of 6d. for a parcel. A moderate extension of this parcel system to wider radiuses on the basis of the van train charge—that is, one-half the current parcel rates, would prove advantageous to farmers, and bring the railway a large and remunerative traffic. This should be sought for, and would probably be conceded by the railway company without difficulty.

The outlet for fruits will be found in two directions which have a widely different character, and necessitate different treatment—the supply to London and the few very large towns in the north, and the supply to the small towns and villages throughout the kingdom. With the first we have the large concentration of fruiterers, greengrocers, and costermongers, who have hitherto furnished the means for reaching the public. With the second they have to a great extent done without fruit, as it could not be supplied in a fresh condition. Whether the fruits are intended for London or the country districts, railway companies should be compelled to provide effective refrigerator trucks for their conveyance, in order that its fresh condition may be fully maintained. Growers know the condition that fruits leave them, but they are not aware of the serious deterioration that takes place in transit before reaching their destination, and the consequent enormous depreciation that takes place in values. A few hours makes a great difference in the appearance and flavour of fruits, and there can be no possible justification for the unnecessary loss thus made to the detriment of the grower, when the fruits could be readily and inexpensively retained in a fine and fresh condition.

In America the fruit farmers of California and Florida, the extreme western and southern States, send their fruits two and three thousand miles across the vast continent to the markets of New York, Baltimore, Boston, Chicago, &c., where they arrive in fine condition after several days' travel, and invariably bring good results to the grower, while in this country a fruit grower cannot send his produce a few miles with any certainty of its reaching its destination in a presentable condition, and if he wishes to send any distance other than where an ordinary fruit train runs, there is almost a certainty that it will be useless when it arrives at its destination. This deterioration and its consequent loss is more than a personal loss of the particular sender, it is a diminution of the food supply of the people, and in that light it is a national loss, needlessly incurred by reason of the negligence and want of care on part of those who have acquired the right to transport the internal food supplies of the country, a loss which is readily preventible by the use of proper trucks, which the railway companies should be compelled to provide themselves or allow others to provide for them. The companies should also be called upon to accept a truck rate for agricultural produce irrespective of contents. This would enable fruit and other farmers to load trucks in proximity to their farms or on railway sidings with their own labour, and while saving charges send their produce direct to the market. The provision of a regular and effective daily service for the conveyance of parcels of food produce in refrigerator cars, at a reasonable advance on the ordinary goods rates, would materially facilitate the communication between producers and consumers, and lead to marked advantages to fruit growers. To simplify matters, the rates by this produce train might be fixed within given areas. Thus all within a radius of one hundred miles one rate, and each additional hundred miles an additional rate. This would bring most of the agricultural districts within reach of populous towns, and thus furnish them with an outlet for their produce. That this system would be advantageous to fruit growers may be readily seen, for grocers, dealers, or even consumers in any small town might order any number of the packages of fruit from one upwards, which, packed on the orchard and transmitted by the refrigerator cars, would reach their destination direct, at a small cost and in good condition. The essence of the fruit trade is a multiplication of individual transactions small in extent but numerous in character. It is in the simplification of the distribution of these that growers will be in a position to place their produce within reach of consumers at the least possible cost, and thus acquire a further insight into the science of fruit distribution.

To summarise, in conclusion, I submit—

1st, That the simplest and most profitable way to sell fruits is in their natural condition properly classed and packed.

2nd, That an ample demand can be ensured for an unlimited quantity from numerous districts in all parts of the kingdom.

3rd, That these can be best approached and dealt with by local combinations of growers either direct or through a central agency.

4th, That whatever prices are determined upon should be publicly known and fixed to give retailers a profit.

5th, That the railway companies should be moved to furnish a daily farmers produce parcel and bulk train service for the carriage of food products in refrigerator trucks between the agricultural and industrial districts at reasonable package and truck rates.

With the supply of these facilities a demand would be created for their utilisation, and thus bring about an improved condition of all things in which the interests of our agricultural and industrial classes are entwined.

*** Mr. Manning's paper arrived too late for insertion.

DISCUSSION.

Mr. J. Cheal of Crawley in returning to the leading subject of the Conference, observed that the question had been asked as to whether fruit could be profitably grown on at least some of the secondary soils of the country. In answering this he might say that it could, as they had

experience of this in Sussex, but more care was required, more preparation for planting, and more attention subsequently. A list of Apples that would be suitable for good soils would be unfitted for those of a poor character ; for instance, they found Lord Suffield could not be grown with profit on poor soils in Sussex, and Lord Grosvenor was found to be preferable. He agreed with Mr. Rivers that careless planting was answerable for many failures in fruit culture. The ground should be well cultivated to a uniform depth, in order that water and air should have a free passage, not merely digging holes to stick the trees in. He had recently seen some poor land in Sussex owned by an amateur, who had planted a number of fruit trees in narrow holes that were little better than pits or graves for the trees. Trees also should not be planted deeply, but preferably on the surface, raising the soil over the roots, and stiff soils should be carefully stirred. Stocks also required consideration. He considered fruit growers ought at least to be able to supply their home markets. By the aid of Conferences and Associations like that at the Crystal Palace much might be done to show how land can be profitably cultivated, but it must not be expected that fruit trees would succeed without attention ; the results depend entirely upon the thought, care, and labour expended.

Mr. Alderman Chaffin of Bath said plenty of cheap land could now be obtained, and there was no reason why it could not be made to pay a good per-centage on the outlay. The chief difficulties in the way of profitable fruit culture were the cost of transit, the heavy tithes, and the expense of distribution by means of "middlemen." An extended knowledge of what varieties of fruits to grow in particular localities was important ; also a knowledge of the soils and their qualities. He thought growers should combine among themselves, selecting agents and dividing the profits after deducting the expense of selling. A vote of thanks to the readers of the papers was proposed by Mr. Bunyard and seconded by Mr. Pearson, both of whom made some interesting remarks upon the subject, and Mr. Hammond commented upon the importance of more careful packing, the selection of fruits in different qualities, and greater honesty on the part of vendors who wished to secure good returns.

Mr. T. W. Beach, Brentford, read a short paper upon drying and preserving fruits, illustrated by samples of Pears, Plums, Cherries, &c., in various stages.

Mr. J. Cheal proposed a resolution to the effect that it was desirable an asssociation of fruit growers should be formed for the promotion of profitable fruit cultivation, and to improve the methods of distribution, the Executive Committee of the Conference being requested to prepare a report on the subject, to be submitted to the next meeting at the Crystal Palace on October 11th this year. He said he had much pleasure in submitting this to the meeting, as he believed such Conferences as they had had on that and the previous day would do valuable service. Mr. Fowler seconded the proposition, which was carried *nem. con.*

A vote of thanks to the Chairman was then proposed by Mr. Tallermau, seconded by Mr. Laing, and carried by acclamation. Mr. Rivers, in replying, said they had every reason to be satisfied with their first Conference, and the thanks of all concerned were due to the Crystal Palace Company and officials for the assistance rendered to the promoters. He also wished to say that the credit of having originated this successful Conference rested with Mr. G. Gordon and Mr. L. Castle. The meeting was then adjourned to the first day of the Hardy Fruit Show at the Crystal Palace on October 11th next.

CABBAGES AGAIN.

WHEN I saw the notification of a reply having been received to my gentle critique on page 163 I naturally looked forward with anxiety to the Journal containing the "short and sweet effusion." On perusing this it is more than ever clear to me that my combative opponent who "lets them have it right and left" has something to learn on Cabbage growing, or he would not suspect a "mystery" in Ellam's Early Cabbage being superior to Early York in spring, but inferior to it in the autumn. I am bound to express my astonishment at being asked to explain such a simple matter, still as information is confessedly needed it must be given. If "A Kitchen Gardener" had grown both the varieties from spring-sown seed, as I have, he would have solved the mystery, for in all probability Ellam's would have merited his strong condemnation for splitting while the Early York that he said would "never be a favourite again" would have secured his laudation for remaining intact, sound, and tender. He says he is "no autumn Cabbage eater." I have not the slightest objection to that. I grow Cabbages to please myself and others who like them, and we have not found any better at the time when they are wanted, and provided, than Early York ; but to sow it in autumn for bolting in spring, and then condemn the variety, is in my view putting the blame in the wrong place.

I observe "A Kitchen Gardener" shows his natural boldness even in quotation, for if he can find I said "there is no variety in existence equal to Early York for sowing in spring," as he alleges, I venture to say no one else can find that sentence in the article from which he takes it, nor any other conveying the same meaning. I prefer to be quoted accurately, though I always feel that no one can misquote another without weakening his own position. In this case, however, it was no doubt accidental—a slip of the pen, but a mistake all the same.

There are other causes that contribute to the bolting of Cabbage plants in spring besides early sowing. If I mistake not the distributors of Ellam's Early, Messrs Veitch & Sons, advise on the seed packets that it be sown on the 10th or 12th of July (I forget which), and they would not do that if, as my opponent says, it would "never answer." In my experience the vendors are perfectly right, and I know, and could have shown "A Kitchen Gardener," a bed of 3000 plants in Yorkshire ready for cutting in March from seed sown on the first-named date, and not three dozen of them bolted, though it might not be the same every season and in every district.

Spring-sown Cabbages are ready too soon this season. They are the most useful in the autumn, and if I only made one sowing it would be the last week in May, and for the purpose in view I have not grown one variety to excel the Early York, but should be sorry to say there is not one variety in existence equal to it. "A Kitchen Gardener" can scarcely have grown the true Dwarf Early York from spring-sown seed, or he would not be so widely at variance with the examiners of the Chiswick trials, who, according to the report on page 186, placed it among the best six out of forty spring-sown varieties, and earlier in the season it was recorded that Ellam's was certificated because of its value for spring use. Thus the mysterious conjunction over which your correspondent stumbled is solved by authority, and both varieties rank among the best in their respective seasons for use.—A YORKSHIRE CABBAGE GROWER.



SPORTS.

SOME of us are, perhaps, less likely to see these than others. My Roses are a great pleasure to myself, but I also try to make them a source of happiness to others, hence almost daily my few hundred plants are clipped, every Rose worth anything being cut and sent to friends who have none. So, if the sport in my case were at all a damaged flower, I should cut it without looking to see what it was. But in the way of sports I have had a curious experience. Some five years ago Mr. Prince, in sending me some Roses, added two plants of Merveille de Lyon. This, I think I am right in supposing to be a sport from Baronne de Rothschild, but anyway derived from her ladyship. I did with these two plants, when they came, what I generally do—I cut all the shoots that I should not require for the following year, leaving all the others full length. These pieces that I cut out I inserted in the ground under a small frame, and ten or more struck. The following autumn these were planted out, and being anxious that they should do well, they were not put in my ordinary bed, but in a place by themselves, so there is no possibility of mixing. The following winter was awful. Last winter was ditto repeated, only worse, and several died. They did not do very well last year, but one of the plants brought pinkish flowers, more like the mother, but as they were poor in condition I thought this might be accident. This year they have done fairly, and the plant in question has become unmistakeably a Baroune de Rothschild ; but one of the other plants has turned to Mabel Morrison, another sport from the Baroness. On this plant I had a very pretty Rose, several of the white petals having touches of light pink, some of the splashes taking half the petal. I have inserted the buds of the stem on which this bloom grew. Just as an additional link in this history, at our local Rose Show the Rev. W. Gardiner of Box showed a Baronne de Rothschild bloom, which, retaining its pale blush colour, had two or three of its petals splashed with much darker pink. The plant of my own that seems to have become a Mabel Morrison has had blooms with the thinness of petal of that Rose, and quite unlike the number that we see in Merveille de Lyon.—Y. B. A. Z.

ROSES IN WINTER.

THERE is a very general impression that Niphetos and such like varieties are exhausted much sooner when planted out than when they are confined in pots. This is a matter of importance. The idea may be new to some, but it has been brought to my notice on several occasions and by different persons interested in this particular subject. If it can be proved that the plants become exhausted in less time when planted out than when they are grown in pots, then planting them out would appear to be a great mistake.

Only a few years ago the Manetti was held up as the stock for Roses, and they were manufactured upon it wholesale. I have again and again in these pages pointed out that those who praised this stock were advocates of Roses upon their own roots, and that the Manetti was useless as a stock except to manufacture Roses upon quickly. I

firmly believe that the impression stated above has had its origin from this very source. In spite of the fact that fine flowers can be cut from maidens on this stock, it is nevertheless useless for working very strong growers upon. Weak and moderate growers may live upon it and do well, but strong growers are liable to collapse if they do not root freely from the union of the Rose and stock by deep planting. Strong growers will use up this stock in a very short time ; Maréchal Niel, Gloire de Dijon, and others will kill it in about twelve months. Even the moderate growing Teas, if they are grown strongly and do not root freely from the union, will not last for any great length of time. When the union is buried they do not always root freely from it unless they have been covered with soil almost directly they leave the propagating pit.

I can readily understand that plants grown in pots would last longer on this stock than if planted out. The treatment they must receive to keep them in good health would promote a more moderate growth, and thus they would last longer than those grown luxuriantly in a prepared border. I know perfectly well that instances can be adduced that even strong growers have lived for many years upon this stock, but they would prove the exception, not the rule. I am not writing in a condemnatory vein of the Manetti because I have favourites to adduce. One stock is as good as another to me as long as it answers the purpose satisfactorily for which it is used. I have watched with peculiar interest the Manetti and its behaviour as a stock since I first had to make cuttings of it in the autumn of 1871, and believe it to be useless for several Roses, and practically worthless unless the Rose can be induced to root freely and become independent of it. I would not plant out Niphetos worked upon it if I knew it, but should not hesitate to plant Safrano, Isabella Sprunt, or any that I know would emit roots from the union as quickly and freely as those two kinds. I will return to the subject.—Wm. Bardney.

MRS. PINCE'S BLACK MUSCAT GRAPE.

When well grown this has no equal as a late Grape, although it will not keep so long in condition as Lady Downe's. So this excellent variety should also be grown so as to prolong the season. Imperfect setting and want of colour are the evils which have been raised against Mrs. Pince, but the former is easily overcome by drawing a camel-hair brush over the bunches when in flower, and the latter may be averted by not cropping too heavily, and by allowing the light to play directly on the bunches. Shade by an abundance of foliage has been recommended to obviate the evil of defective colour, but this is a great mistake with the Grape in question. We have a Vine planted at the west end of a late vinery, and noticed last season where the light struck the bunches directly there the colour was the densest. I intended to write concerning this Grape last season, so as to confirm what was stated by a writer respecting Mrs. Pince as grown at Longford Castle. We have some very fine bunches with large berries colouring beautifully. Coarse varieties are now becoming too largely grown, but in due time these will find their level. Gardeners who have tables to keep supplied with superior fruit know the praise which is bestowed on well finished bunches of this excellent Grape.—A. Young.

ARTIFICIAL MANURES.

The satisfaction with which Mr. M. Coombe regards the enlightened state that he has suddenly discovered has dawned upon my mind is gratifying to me, because many of the truths elucidated are entirely opposed to the views he formerly advanced, but which have of late been reduced to the point where they can be put into practice.

I have no intention of reopening this discussion, but as my opponent seems somewhat puzzled to define the difference between the "judicious combination" I find in his recent remarks, and the "properly proportioned ones" he formerly so strongly advocated, I will try to put the matter in words incapable of being misconstrued. The judicious combination referred to is brought into action by using the knowledge we possess in preparing food for plants, no matter whether that knowledge is obtained by the aid of science, practical experience, or close observation, so long as it supplies the food found to produce the best results. The properly proportioned combination theory is giving to plants that food which according to science should be perfect ; but unfortunately no method has yet been devised by which this theory can be reduced to economical and successful practice, hence the gradual change of Mr. Coombe's remarks. I have in no instance opposed the application of science to gardening or farming, as I believe the greatest amount of success will be attained by those who have a good general knowledge of plant life, and whose perceptive faculties and daily experience enables them to test their science step by step, discarding those chemical niceties that are found unnecessary, turning to account the natural resources within their reach, and thereby triumphing over the difficulties which beset their path. Knowledge is in itself a tremendous power, but it is a notorious fact that those who possess the greatest amount of knowledge are by no means the most successful in life. Something else is needed—viz., the ability to turn to practical use every atom of knowledge gained. This is the unerring passport to success in nations and individuals alike.

Before taking leave of this subject I gladly express my thanks to Mr. Coombe for having, by means of his candid criticisms, brought forward a subject of so much importance. In the future I shall deem it within my special province to keep watch upon his literary productions, and should I find his enthusiasm lead him to advance scientific theories in an impractical form I may again try conclusions with him. If, while I am pursuing my scientific studies in peace in the hope of producing a perfect plant food, Mr. Coombe will diligently set about the task of acquiring the knowledge necessary to analyse soils and manures, he will be able to inform me when I have successfully accomplished my task from an economic and also a scientific point of view. Our united efforts should then reduce to a simple, efficient, and practical system the use of artificial manures.

I join with my late opponent in the expression of hearty thanks to the Editor for the freedom allowed in this debate, and I trust that those readers who have been wearied by its length will be satisfied with its termination.—H. Dunkin.

[We again congratulate our correspondents, both on the ability they have displayed, and the admirable tone maintained in the discussion that at present terminates, and which cannot fail to have been both interesting and instructive to many readers.]

ROYAL HORTICULTURAL SOCIETY.

September 11th.

The Exhibition hall was well furnished with plants and flowers, several being new and rare, and good collections of fruit were staged, the orchard house specimens, grown in pots by Rev. W. Wilks, being remarkable for their size, and attracted much attention.

Fruit Committee.—Present : R. D. Blackmore, Esq., in the chair, and A. H. Pearson, J. Cheal, P. Crowley, J. Bennett, J. Willard, W. Warren, W. Marshall, G. T. Miles, and J. Wright.

Violette de Bordeaux, a medium-sized purplish Fig, sent from the Society's gardens at Chiswick, was approved by the Committee as of good quality, but a certificate was not awarded. Tomato Ascough's Champion, sent by Messrs. Hurst & Son, Houndsditch, was recommended to be tried at Chiswick. It is a rather small fruit, and may possibly not prove to be very dissimilar from the Chiswick Red. Devonshire Quarrenden and Irish Peach Apples, the former fine and well coloured, the latter of excellent quality, were sent by Mr. W. Roupell, Roupell Lodge, S.W., and having regard to the fact that they were grown within five miles of Charing Cross, a cultural commendation was recorded. Mr. Roupell also sent a seedling Tomato, very much like Perfection. Pride of Lincolnshire Pea, very large and fine pods, sent by Mr. J. Marriott, Boston, was referred to be grown at Chiswick for trial with other varieties. Mr. Williams, Blenheim Palace Gardens, sent a good looking and well netted Melon, but not of high flavour, but the variety appears to be worth trying during a brighter season. Mr. A. Dean sent a dish of the Early Harvest Apple, a good early variety, but the fruits were not quite ripe.

Rev. W. Wilks sent a seedling Apple, the Vicar, said to be a free cropper and good grower in poor soil. The specimens were very good, and thought to resemble the Domino. They were gathered from the seedling tree, and more will perhaps be heard of this variety, which is of promising usefulness. Several other dishes of fruit were sent by Mr. Wilks, and a cultural commendation awarded. They were grown in pots in an orchard house. Cox's Orange Pippin Apples were 3½ inches in diameter, eleven grown on a tree in a 12-inch pot, and Hormead Pearmain 4 inches wide, 3¼ inches deep, fourteen being borne on a tree in a 10-inch pot. The above were splendid examples of culture, as were several Pears, and a cultural commendation was unanimously awarded. Mr. D. Tallerman sent fruit of Strawberries, Gooseberries, Rhubarb, and Potatoes dried by the Blackman Ventilator Company, Fore Street, London, and the Committee desired that examples be prepared, cooked, and reported upon by the Committee in charge of the cool storage trials of fruit.

An excellent representative collection of fruit, also cordon Plums bearing fine crops in pots, were exhibited by Messrs. James Veitch and Sons, and a vote of thanks was awarded.

Floral Committee.—Present : G. F. Wilson, Esq., in the chair, and Messrs. W. Wilks, J. Walker, W. Goldring, W. Bates, J. W. Lowe, R. Dean, T. Baines, C. Pilcher, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, Shirley Hibberd, W. Holmes, J. Fraser, and G. Nicholson. Messrs. Kelway & Son, Langport, Somerset, contributed a large collection of Gladioli spikes wonderfully bright and fine, representing a large number of varieties, including several new ones (silver Banksian medal). Mr. W. Gordon, Twickenham, sent a handsome group of Lilium lancifolium and L. auratum varieties associated with Japanese Maples and Adiantums (bronze Banksian medal). From the Royal Horticultural Society's Chiswick Gardens came a collection of Asters, very bright and varied in colours ; large heads of Hydrangea paniculata grandiflora also came from the same gardens. Mr. G. S. P. Harris, Orpington, Kent, showed a stand of Dahlias, for which a vote of thanks was awarded. Mr. Cook, Kingston Hill, sent two plants of Lælia elegans, one having a spike of ten fine flowers of good colour. Mr. T. Butcher, Croydon, sent plants of Carnation Blushing Bride, very soft delicate pink, free and of good habit.

F. G. Tautz, Esq., Hammersmith (gardener, Mr. Cowley), was awarded a cultural commendation for a well grown plant of Oncidium macranthum var. Williamsi, having a very long raceme of flowers. W. Soper, Esq., 307, Clapham Road, sent a cream and crimson coloured Coleus (vote of thanks). Mr. B. S. Williams, Upper Holloway, sent several Orchids, comprising a fine Miltonia candida, Mesospinidium vulcanicum superbum, and Lælia monophylla. Mr. R. Allum, Tam-

worth, sent a seedling Adiantum with small pinnules, and it was described as "the result of spores gathered from A. Paccoti and cuneatum" and presumably sown together (vote of thanks).

G. F. Wilson, Esq., Weybridge, sent several spikes of Lilies, including L. auratum platypetalum, rubro-vittatum, and tigrinum florepleno from out of doors, showing the bad effects of the recent weather in damaging flowers. Mr. A. Harding, The Gardens, Orton Hall, Peterborough, showed fruits of Torreya myristica and a fine cone of Abies magnifica. Mr. H. B. May, Edmonton, contributed an extensive group of well coloured Crotons, arranged with Ferns and Isolepis graeilis. Several baskets of Bouvardias, Carnations, and Mignonette were also shown (silver Banksian medal). T. W. Girdlestone, Esq., Sunningdale, Berks, showed a box of single Dahlias, one of which was certificated. Mr. R. Dean, Ealing, exhibited several varieties of Phlox, Pentstemon, and Dianthus. Mr. T. S. Ware, Tottenham, had his usual beautiful group of hardy flowers, chiefly Phloxes, Lilies, and Poppies (silver Banksian medal). Mr. F. Ross, Pendell Court Gardens, Bletchingley, sent flowering branches of the white Arauja or Physianthus albens, which has been described and figured in this Journal.

CERTIFICATED PLANTS.

Lilium nepalense (H. Low & Co.).—A most distinct Lilium introduced a few months since, the first time it has flowered in this country. Plant of slender growth, 3 to 4 feet high; leaves lanceolate, 3 to 4 inches long, each stem terminating in a single flower, but in its native country it is said to have as many as sixteen each. The flowers are about 4 inches in diameter, drooping with recurving petals, deep gloosy maroon tipped with yellow.

Eremurus Olgæ (T. S. Ware).—A majestic plant, with a tall spike several feet in length of closely set bluish-tinted flowers darker in the bud.

Romneya Coulteri (T. S. Ware).—Leaves and stems glaucous, the leaves irregularly cut; flowers pure white, 5 inches in diameter, with a dense tuft of yellow stamens in the centre. Very suggestive of a Poppy.

Tritonia aurea, crimson spotted (J. O'Brien).—One flower of this was shown, the petals orange yellow with a crimson blotch in the centre of each.

Gladiolus Castro (Kelway).—Flowers very large, bright salmon pink, white centre.

Chrysanthemum Mrs. H. Hawkins (Hawkins & Bennett).—A bright golden sport from G. Wermig; blooms large with broad florets.

Disa graminifolia (F. G. Tautz, Esq.).—One of the small blue-flowered Dias after the style of D. lacera, and produced in a slender scape without leaves like that species. A botanical certificate was awarded.

Oncidium ornithorhynchum album (B. S. Williams).—A graceful variety with a spreading panicle of white flowers, having a yellow crest at the base of lip.

Carnation Madame Carle (B. H. May).—An excellent variety, with neat pure white fragrant flowers.

Dahlia Mikado (T. W. Girdlestone, Esq.).—A single variety with large blooms and broad florets, bright crimson yellow at the base and the tip.

Dianthus splendens (R. Dean).—A single variety, described as a cross between Dianthus Heddewigi and D. barbatus; brilliant crimson, slightly darker in the centre, and fringed at the margin.

Lælia monophylla (B. S. Williams).—A small slender plant with narrow leaves and one flower of a bright orange colour. A botanical certificate was awarded.

A MEETING of the Floral Committee was held at Chiswick on September 6th. Present Mr. H. Herbst in the chair; Messrs. Nicholson, Baines, Pollett, Holmes, Dean, Dominy, and Wildsmith.

The collections of Asters on trial in the gardens were examined, when the following awards were made:—

Received from Messrs. Vilmorin, Andrieux, & Co., Half-dwarf Multiflora, eight vars., strain commended; Imbricated, twelve vars., strain commended, indigo blue, receiving three marks; Globe Pæony-flowered, rose, three marks; Imbricated Pompon, thirteen vars., strain commended; Dwarf Chrysanthemum-flowered, eleven varieties, strain commended, flesh coloured, scarlet copper, and lilac white edge, three marks each; Crown Asters, lilac, three marks.

Received from Herr Ernst Benary:—Dwarf Victoria, seven vars., strain commended, lilac rose, indigo blue, and light carmine, three marks each; Dwarf Cocardeau or Crown, four vars., strain commended, rose, crimson, and violet, three marks each; Dwarf Pæony Perfection, rose, glowing dark scarlet, light blue and white, three marks each; Lilliput, eight vars., strain commended as being valuable for late flowering purposes; Pæony-flowered Globe, twelve vars., strain commended, white, brilliant lilac, peach blossom, rose tipped with white, carmine and white, purple and white, and crimson, three marks each; Victoria Needle, eight vars., strain commended, fiery scarlet, three marks; Large-flowered Rose, twelve vars., strain commended, dark scarlet, three marks; Victoria, eighteen vars., strain commended, white, white turning to azure blue, peach blossom, carmine rose, reddish lilac, light blue and white, and white turning to rose, three marks each; Imbricated Pompon, nineteen vars., strain commended; Truffaut's Pæony-flowered Perfection, strain commended, rose and white, carmine, light blue, black blue, and dark scarlet and white, three marks each; Tall Chrysanthemum-flowered, eleven vars., strain commended, slate blue, three marks; Hedgehog or Porcupine, twelve vars., strain commended.

Received from the Speciality and Novelty Seed Company: Dwarf Victoria, scarlet, three marks.

GRAPES SCALDING.

I CAN endorse what Mr. Bardney stated concerning the scalding of Grapes, and I can assure Mr. Young that it is no fancy of Mr. Bardney's when stating that "the Black Hamburgh will scald as badly as Lady Downe's if the necessary precautions are not taken." I have seen Black Hamburgh very badly scalded, and in one instance under my own charge, "the necessary precautions" had been neglected by the man responsible for the airing of the vineries. The scalding of Black Hamburghs, it must be admitted, is not so general as with late Grapes, the former being more generally grown when there is a greater difference between the inside and outside temperature, which necessitates a greater amount of fire heat; consequently the air of the house would be correspondingly drier. When Black Hamburghs are grown with little assistance from fire heat, I consider they are just as liable to scald as any other Grape, if the "necessary precautions" are neglected. It is of very great importance that the ventilation of vineries during the stoning process should have thorough attention, and young men who have charge of them should make themselves thoroughly acquainted with that which is the cause of the mischief, and work accordingly.

I cannot agree with Mr. Young in having "no fixed temperature." The practice may do with an experienced hand, but for the guidance of young men a stated temperature should be attached to the thermometer, and adhered to as near as possible; there is no excuse then on the part of those in charge. An experienced hand may walk into a house and know the temperature without referring to the thermometer, but this is not the case with the inexperienced.—W. SIMPSON, *Knowsley*.



SUMMER-FLOWERING VARIETIES.

JUDGING from the absence of these flowers from many of the reports recently published, it may be surmised they are not so generally cultivated as is desirable. They have been, however, very effective in borders this year. Mr. W. Piercy, who devotes much attention to this class of Chrysanthemums, sent the flowers that are engraved. The dark flowers represent Blushing Bride (which the engraver has made to blush rather too deeply), the two lower light ones L'Ami Coudercher, and the upper ones Fiberta or Flora, we forget which, and the point is immaterial, as both were sent to the artist and both are good. Writing on the varieties, Mr. Piercy says, "Blushing Bride is the best in its line, and is of a very bright transparent blush colour, growing 2 feet high. It was imported from France by Mr. N. Davis. It is remarkable in that it blooms twice in one season, and is the only one that will do so except Nanum, the Sistou of the French, which it does not resemble in any other way, except that they are both dwarf stiff plants, doing well without sticks. It is not nearly so well known as it should be. L'Ami Coudercher came to me from Lyons a season or two back, and is the best of its type in cultivation. It is a pretty little pale primrose flower, somewhat resembling Petite Marie, but, unlike that, is robust, easy to grow and to keep bushy, and 18 to 20 inches high, blooming in August. Fiberta is a beautiful lemon yellow Pompon, blooming profusely from July to October; and Flora is in some respects still the best yellow Pompon, being very bright and free. Early Chrysanthemums are advancing yearly, but it is too soon to record the progress of the season."

NATIONAL CHRYSANTHEMUM SOCIETY.

SEPTEMBER 12TH AND 13TH.

THE first of this Society's exhibitions for the present year was held in the Royal Aquarium, Westminster, on Wednesday and Thursday, and proved very satisfactory, Dahlias especially being well shown. Over 600 feet run of staging was occupied with exhibits, the competition being keen in all the leading classes.

Mr. T. S. Ware, Tottenham, had the best collection of cut Chrysanthemums, representing thirty-two varieties, all fresh, bright, and good; Mr. R. Owen was second with about thirty varieties, and Mr. J. P. Kendall, Roehampton, third. The variety Madame Desgranges was capitally shown. Mr. J. Blackburn, gardener to J. Scott, Esq., jun., Elmstead Grange, Chislehurst, was first with wonderfully pure blooms; Mr. J. Hudd, gardener to F. W. Prior, Esq., Gordon House, Blackheath, was second, and Mr. H. Elliott, gardener to Mrs. Lawrence Harrison, Leyden House, Mortlake, third. Mr. Witty of Highgate had a good collection of Pompons, winning first prize. Mr. Elliott had twelve grand blooms of G. Wermig in the any variety class. Mr. A. D. Clarke, gardener to W. B. Brand, Esq., Finchley, was second, and Mr. H. Neary third. For six bunches of Madame Desgranges Messrs. Scott, Hudd, and Doughty were the prizetakers. Mr. J. R. Witty, Highgate, had the

best group of Chrysanthemum plants well arranged, and Mr. Neary the best twelve specimens.

Dahlias were extremely fine and very numerous. With forty-eight blooms Mr. C. Turner, Slough, was first with grand blooms of the leading varieties. Messrs. Keynes, Williams & Co., Salisbury, were second, and Mr. J. Walker, Thame, third. Mr. C. Turner was also first for good, Mr. H. Glasscock, Bishops Stortford, taking the chief position. Pompon Dahlias were extensively and well shown from Messrs. Cheal and Son, Keynes, Williams & Co., Mr. C. Turner, and others, Cactus Dahlias and single varieties adding to the attractions.

The miscellaneous non-competing exhibits comprised a handsome group of Tuberous Begonias and fine-foliage plants from Messrs. J.



FIG. 26.—SUMMER CHRYSANTHEMUMS.

thirty-six blooms, followed by Keynes, Williams & Co. and Messrs. Saltmarsh. With twenty-four Dahlias Mr. C. Turner was again the most successful exhibitor, followed by Messrs. Saltmarsh and Keynes, Williams & Co. The premier prize for a collection of Gladioli spikes was awarded to Messrs. J. Burrell & Co., Cambridge, the Rev. H. H. D'Ombrain being third. The exhibits in the smaller classes were also Laing & Son, Forest Hill. Messrs. H. Cannell & Sons, Swanley, contributed a large collection of Show, Fancy, Cactus, Pompon, and single Dahlias, with Tuberous Begonias and brilliantly coloured Cannas.

A meeting of the Floral Committee was also held in the afternoon, several Chrysanthemums and other flowers being shown for certificates.

Notes & Gleanings

EVENTS OF THE WEEK.—To-day (September 13th), Exhibition of Chrysanthemums, Dahlias, &c., at the Royal Aquarium, Westminster (second day). Glasgow and West of Scotland Horticultural Society's Autumn Exhibition (second day). Sales of Bulbs at Messrs. Stevens' Rooms next Monday and Wednesday, and at Messrs. Protheroe and Morris's Rooms next Monday and Thursday.

—— A CORRESPONDENT writes on PRESERVING MOUNTAIN ASH BERRIES:—"Pull when ripe, place them between layers of hay, and they will keep plump for a long time. Without any further care we had some that kept plump and attractive for a year, and were in good preservation when thrown away."

—— IN reference to the judging at the recent Salisbury Show, Mr. H. W. Ward, Longford Castle Gardens, writes:—"In justice to the local gardeners who took part in making the awards at the above excellent Show, will you kindly allow me to say that the exhibiting Judge referred to in the *Journal of Horticulture* for August 30th, page 202, does not reside within the postal district of Salisbury."

—— THE DEVONSHIRE POMOLOGICAL SOCIETY.—The fourth annual Exhibition of Apples and Pears is announced to be held at Exeter on October 25th and 26th, when prizes will be awarded in the fifty classes provided in the schedule. The principal object of the Society is to attract attention to the recognised best sorts of Apples and Pears, and thus conduce to an improvement in the special culture of these fruits in the county of Devon and the West of England. The Right Hon. Sir T. D. Acland, Bart., is the President, and Mr. Isaac Pengelly, Guildhall, Exeter, the Hon. Secretary of the Society.

—— BRIEF NOTES.—Short communications on subjects of interest are acceptable for this column, and Mr. Arthur Young obliges with the following five "Notes:"—

—— WHINHAM'S INDUSTRY GOOSEBERRY.—This is a most valuable addition to our hardy fruits, as it is very prolific and handsome in shape. It is valuable for picking green, or for remaining to become ripe. An acre or two would be a good investment.

—— CARNATIONS MRS. REYNOLDS HOLE AND JAMES FITZPATRICK.—The former Carnation has proved itself a valuable acquisition, and is a favourite with all who see it. The latter (James Fitzpatrick), also sent out by Messrs. Dicksons of Chester, is another decided acquisition. It is of the same colour as the Tree Carnation Miss Jolliffe, but with a fringed edge. It is a very free bloomer, and, like Mrs. Reynolds Hole, is what is termed a border Carnation.

—— LEYCESTERIA FORMOSA.—This handsome shrub is now in full beauty. A short time since the bushes were covered with drooping panicles of flowers, and these are now succeeded by bunches of claret-coloured fruit, almost like bunches of Grapes. Some authorities term it a half-hardy evergreen, but this is a mistake, for here upon the Worcestershire hills it is quite hardy without any protection whatever. The soil is a cold limestone clay, and during the winter the weather is very severe.

—— ECKFORD'S SWEET PEAS.—Last season we purchased a small packet each of Eckford's new varieties of Sweet Peas. These were mixed at the time of sowing, and at the present the row is a sight to behold. It is a mass of handsome flowers of various colours. A great advance has been made during the past few years in Sweet Peas. At first the change was hardly noticeable, but now it is very apparent. In a year or two hence we may expect to find still greater improvement.

—— MELON, THE BLENHEIM ORANGE.—Are the new Melons which are continually cropping up better flavoured than the varieties of a few years ago? I think not. I suspect the old varieties are not kept true, and so dwindle away from the original stock. I believe we have the true stock of Blenheim Orange, and I do not think there could be "handsomer, better flavoured, better fruiter, or better constitutioned Melon. There is no difficulty in keeping the main foliage green and healthy to the last, and this means good flavoured fruit, whatever the advocates of the "drying off" system may think. My neighbour, Mr. J. Austin of Witley Court, also relies upon the "Blenheim" exclusively, and rare crops of fine fruit he has.

—— GARDENING IN INDIA.—We have pleasure in inserting the following announcement from Mr. W. Goldring:—"You may perhaps consider the fact worth recording in the Journal that I have been commissioned by His Highness the Maharaja Gaekwar of Baroda to go out to India to design and lay out some magnificent gardens around his palaces at Makarpura and Laxmiviloso at Baroda, and other public parks and gardens in His Highness's dominions. I have engaged to spend three winter months (December, January, and February) for the next three years in India, so that I shall be able to continue my home practice, which of course is at a standstill during those months. The Gaekwar, whom I have recently interviewed in Switzerland, is greatly interested in gardening, and he is desirous of advancing horticulture in Baroda in harmony with European ideas."

—— POTATO COLE'S FAVOURITE.—Mr. W. Iggulden writes:—"On lifting the crop of this variety I was agreeably surprised to find a capital lot of tubers with only a very few diseased ones among them. The haulm died down somewhat prematurely, and I fully expected to find the bulk of the crops badly diseased. Instead of this we have a capital lot of medium sized tubers as 'handsome as paint,' not one deep eye to be seen on them, while the quality is first rate. It is one of the best to use in succession to the Ashleafs or other early varieties, and as far as we are concerned would be included in a collection for extensive culture and limited to six varieties. Our stock came from Messrs. J. Veitch & Sons, and I have not noticed quotations for it in any other catalogue."

—— A PROLIFIC PLUM.—In the Plum-growing districts of Worcestershire and neighbouring counties the variety known as Pershore is most largely planted, this being found one of the most reliable for marketing purposes. It is wonderfully prolific, quite young trees bearing good crops. The fruit is rather small, of a greenish yellow colour, and is principally recommended for cooking and making into jam. Gisborne's, a variety somewhat resembling the Pershore, proves to be even more profitable than the latter, and is now being largely planted in preference to it. I have recently seen rows nearly a mile long of Gisborne's, which, though only planted about four years, were carrying remarkably heavy crops of saleable fruit, and intending planters ought to make a note of it.—I.

—— GROS MAROC GRAPE.—Are there not two forms of this handsome, though by no means high-class, Grape in cultivation? One form produces short thick bunches with large round berries, but which do not colour so readily as in the case of another form that has much longer bunches and oval shaped berries. These two forms may sometimes be seen in one house, both being on a similar stock, the grafts, however, being obtained from different sources. This noble-looking Grape colours perfectly in a cool house, but the quality is improved by a little fire heat. Extra fine bunches have been exhibited this season in various parts of the country, but none that I saw were perfectly finished, and it is doubtful if large bunches have so much weight with the judges as those who exhibit them imagine.—W.

—— THE WAKEFIELD PAXTON SOCIETY.—At the last weekly meeting of the members of the above Society Mr. A. Goldthorpe presided, and Mr. J. G. Brown occupied the vice-chair. Considering the unfavourable state of the weather there was a good attendance. The subject for discussion was "Carnations and Picotees," and there was a splendid show of specimens grown by members of the Society, the exhibitors including Mr. Gill, Eastmoor; Mr. J. Maddock, Lofthouse; and Inspector Corden, Mr. Maddock's blooms were much admired for their exceptional richness of colour. A number of blooms were also shown by Mr. G. Armitage of the Morley Paxton Society, who attended and gave a lecture on the cultivation of the flower, pointing out the best methods of propagation and the treatment by which the most perfect blooms could be obtained. Mr. Armitage advocated the old fashioned method of layering in preference to cuttings. A good discussion followed the lecture, and at the close a vote of thanks was accorded to Mr. Armitage and also the exhibitors.

—— THE subject selected by Mr. W. T. Thiselton-Dyer, President of the Biological Section of the British Association at Bath, was the STUDY OF BOTANY AS PURSUED IN THIS COUNTRY. As the head of one of the great national establishments of the country for the cultivation of systematic botany, Mr. Thiselton-Dyer devoted a considerable portion of his time to that branch of the science. He thinks that the present outlook of systematic botany is somewhat discouraging ; but congratulates us that no country affords such admirable facilities for work as are now to be found in London—with the Herbarium of Linnæus at the Linnean Society, the rich collections of the older botanists in the British Museum, and the constantly increasing material at Kew. On the other hand he complains that in physiological literature the importance of precise nomenclature is overlooked, and urges that the central problem of systematic botany is to perfect a natural classification. In his closing sentences he reminded his hearers that, whether they took the problems of geographical distribution, the most obscure points in the theory of organic evolution, or the innermost secrets of vital phenomena, not to consider plants is still, in the words of Darwin, a gigantic oversight.

—— IT will probably be conceded by most gardeners that the want of sun has been a greater obstacle to contend with this season than an excess of rain. The weather reviewer of the *Daily News* reports as follows on THE SUNLESS SUMMER :—"The publication of the last weekly report of the Meteorological Office enables us to review the weather of the season with regard to the prevalence of bright sunshine. Taking the past thirteen weeks as a whole, it would appear that the total amount of this most essential element has been very deficient in all parts of the country with the exception of Ireland and the north of Scotland. In the former of these regions, the aggregate duration of sunshine has not been more than from 2 to 4 per cent. less than the average of the previous eight years ; while in the north of Scotland it has actually been 11 per cent. in excess of the normal. Over England, however, matters have been very different, the deficiency varying from 20 per cent. in the north-western district, including North Wales, to 28 per cent. in the north-eastern and midland counties, and to as much as 34 per cent. over the southern and eastern counties. Over all the more central eastern and southern parts of England, in fact, the sun has not shone on an average for more than from four to four and a half hours per day, instead of a possible fourteen or fifteen hours. In Scotland the daily average has been about five hours, and in the Channel Islands about six. A comparison with the brilliant weather of last year gives some very striking results. Over England generally the quantity of sunshine registered during the season which has just elapsed has been little more than half the amount recorded a year ago. In the eastern counties the average daily amount this year was 4·3 hours, against 8·5 hours last year, and in the southern district 4·3 hours, against 8·4. Owing to the marked absence of sunshine the deficiency of heat noticed during the past summer has been relatively much greater during the daytime than at night. In London the mean of the midday readings for the entire period has been more than 4° below the average, while the deficit in the night values has not amounted to as much as 1°. Notwithstanding the general coolness of the season the absolute minimum temperature, or, in other words, the lowest reading observed in London on the coldest night, has been higher than any similar value recorded during any summer since the year 1873. During the past three months the thermometer has not descended below 43°. Last year the summer, although so fine and warm, gave us a minimum temperature of 39°, while in the summer of 1880 the sheltered thermometer on one occasion fell as low as 35°."

PEACHES ON OPEN WALLS.

NOTWITHSTANDING an adverse season like the present Peaches have again proved that they may be grown successfully on open walls, in the south or west of England at the least. In the gardens here we have a wall 100 yards in length covered with healthy trees from end to end, and all, with one exception, are bearing full crops of fruit. Of course, we had the usual impediments to combat, but with perseverance all insect pests were overcome, thanks to liberal applications of tobacco water. I believe many crops of Peaches have been lost this season through insufficient protection during the flowering season. At that time we had two or three very cold days with an east wind blowing. During that time the trees were covered night and day, and that saved the crop. To be successful with Peaches in the open air the trees must have the same attention as if growing under glass, both in respect to branches and roots. Partial root-lifting or pruning must be practised every other season or so, and the border kept firm, mulched, and watered when necessary. The width of the border is about 6 feet, and this is not dug nor cropped in the least. Alexander and Hale's Early are good early Peaches, but it is not advisable to plant too many of this class, as the quality is not equal to the good standard varieties. The following are the varieties grown on the open walls in these gardens. Peaches—Hale's Early, Alexandra Noblesse, Barrington, Dr. Hogg, Grosse Mignonne, Noblesse, Prince of Wales, Stirling Castle, Royal George, Sea Eagle, Walburton Admirable. Nectarines—Violette Hâtive, Lord Napier, and Pitmaston Orange.—A. YOUNG, *Abberley Hall Gardens, Stourport.*

CRYSTAL PALACE.

FRUIT SHOW.—SEPTEMBER 7TH AND 8TH.

POSSIBLY larger shows may have been seen at the Palace, but not many better, except of Apples and Pears, which are necessarily smaller this year than usual. The collections were good, Grapes represented by many fine, but a few unripe examples, while Peaches, Nectarines, and Plums were generally creditable to the producers.

COLLECTIONS.—These, as usual, formed an important part of the Exhibition. Three classes were provided for not less than twenty, twelve, and eight dishes. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, gained the premier award in the first-mentioned class, showing well-finished and very fine bunches of Aluwick Seedling, Muscat of Alexandria, Foster's Seedling, and Black Hamburgh Grapes, Bellegarde and Downshire Peaches, Violette Hâtive and Pitmaston Orange Nectarines, two handsome Melons, an even brace of Pines, and a dish each of good Negro Largo Figs, Jargonelle Pears, Mr. Gladstone Apple, Vicomtesse Herieart de Thury Strawberry, Cherries, Currants, Gooseberries, Oranges, and two lots of Plums. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was second with good bunches and well coloured berries of Madresfield Court and Gros Maroc Grapes; Muscat of Alexandria and Foster's Seedling were rather smaller ; Peaches, Nectarines, Apricots, large and richly coloured ; large Pines, Melons, Figs, Plums, Cherries, also Strawberries of the same variety as shown in the first prize collection, but smaller fruit. Mr. A. Evans, gardener to S. Hodgson, Esq., Lythe Hill, Haslemere, was third. Excepting Grapes, Melons, Peaches, Nectarines, and Pears, the specimens were rather small.

In the class of twelve dishes, Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton Park, Trowbridge, won the chief prize with fine even bunches of Muscat of Alexandria and Black Alicante Grapes, Blenheim Orange and Rood Ashton Melons, the latter a handsome looking fruit having a clear yellow skin ; a capital Smooth Cayenne Pine, Apricots, Peaches, Nectarines, Figs, Apples, Pears, Cherries and Plums. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, Warminster, was an excellent second, showing splendid Grapes, large and well coloured ; Apricots were small, but the remainder all good. Mr. H. W. Ward was third. In the class for eight dishes, Mr. R. Parker, gardener to J. Corbett, Esq., M.P., Impney Hall, Droitwich, secured the foremost place against six other competitors, staging superb bunches of Muscat of Alexandria and Alicante Grapes, fine examples of Princess of Wales Peach, Humboldt Nectarine, Best of All Melon, Apricots, Figs, and Green Gage Plums. Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, was awarded second with excellent Gros Maroc Grapes, Bananas, and Lord Napier Nectarine. Mr. C. J. Goldsmith, Kelsey Manor Gardens, Beckenham, was a good third. The collection shown by Mr. J. Crawford, Coddington Hall, Newark-on-Trent, contained some good dishes, and was commended by the Judges.

Grapes.—These were shown in large numbers, as many as 400 bunches being staged throughout the Exhibition, collections included. The average good quality was surprising considering the recent bad weather for "finishing" them off. With few exceptions there are no really bad Grapes, but many possessing points of great excellence. Taken altogether they made a splendid feature. The competition in nearly all the classes was keen with the exception of that for Madresfield Court ; this brought only three competitors and was certainly the worst class in the Show.

For a collection of ten varieties, two bunches of each, there were only two competitors—Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, Wilts, and Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, the former being placed first by the superior weight of his bunches and the excellence of some varieties. They comprised Black Hamburgh, fair bunches and berries, but short of colour; Alnwick Seedling, shapely bunches, uneven in berry, good colour, but slightly rubbed ; Alicante, good bunches, berries rather uneven, and for this variety only fair in colour ; Gros Maroc, small bunches ; Madresfield Court, good bunches and berries, but showing the effects of the season in the colour ; Gros Guillaume, compact bunches with good berries and colour fair ; and Lady Downe's, medium sized bunches of good colour amongst the black varieties ; the whites being as follow : Muscat of Alexandria, beautifully shaped bunches, very fine berries, almost perfect in colour ; Trebbiano, good bunches, small berries of good colour ; and Foster's Seedling, compact bunches of good quality. The second prize collection contained smaller examples, but the quality was very good, the best being Madresfield Court, long tapering bunches with good berries fairly well coloured ; Alicante, short chubby bunches, good berries and colour ; Black Hamburgh, neat bunches, good colour ; Lady Downe's, bunches of good form and colour ; Gros Maroc, bunches and colour good ; Muscat of Alexandria, small bunches and berries, but

colour good; and Buckland Sweetwater, short stocky bunches, fair berries of good finish.

For a collection of five varieties, two bunches of each, only two competed, the best collection coming from Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, who staged Alicante, large in berry and of fair colour; Gros Maroc, having very large berries, which only required a little more colour to make them perfect; Foster's Seedling, small compact bunch, finely coloured; Duke of Buccleuch, good berries of moderate colour; and Muscat of Alexandria, good bunches, fair berries, and colour. Second Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, with good produce.

Black Hamburgh, three bunches, brought eight competitors, the best fruit coming from Mr. J. Taverner, gardener to Sir A. K. Macdonald, Bart., Woolmer Lodge, Liphook, who had medium sized bunches with berries of good colour. Second Mr. Jas. Chalk, gardener to G. Read, Esq., Wilton Road, Salisbury, larger bunches, of good form, berries rather small and slightly rubbed. Messrs. Rivers & Son, Sawbridgeworth, were third with clusters rather uneven in berry, but well coloured. For three bunches of Muscat of Alexandria six competed. Mr. W. Taylor, gardener to Jas. Chaffin, Esq., Bath, was easily first with immensely large bunches of good form and colour, with the exception of one—the largest—which was badly spotted at the point of most of the berries, which detracted much from its otherwise handsome appearance. Mr. Pratt was second with finely shaped bunches, larger berries rather loose and not well coloured. Mr. C. J. Goldsmith followed with smaller bunches of good colour.

The next class was for three bunches of Gros Maroc, in which nine competed, Mr. M. Gleeson, Clumber, Worksop, being easily first with handsome bunches, large and even in berry, of beautiful finish, in fact perfect specimens of this showy Grape; Mr. W. Taylor was second with much larger bunches, but the berries very short of colour; Mr. W. Allan was third with the largest berries, but not coloured. For Madresfield Court Mr. W. Taylor was first with large shapely bunches, good in berry, and of fair colour; second, Mr. J. H. Goodacre; third, Mr. J. Berry, Tewkesbury Lodge, Forest Hill. The class for three bunches of Alicante produced eight competitors, the best fruit coming from Mr. J. Hollingworth, gardener to J. F. Campbell, Esq., Woodseat, Uttoxeter, with capitally shaped bunches, though not large, with good berries; second, Mr. W. Taylor, larger bunches, but not so good in finish; third, Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Kingston-on-Thames. For three bunches of any other white variety nine entered the lists, the best coming from Mr. F. Lee, gardener to Mrs. Lyne Stephens, Lynford Hall, Mundford, who showed large bunches of Buckland Sweetwater, the berries rather uneven, colour good but rubbed somewhat; Mr. J. Berry was second with Foster's Seedling, compact bunches, good berries, and of fair colour; Mr. J. Hollingworth was third with Trebbiano. For any other black variety Mr. Goodacre was first among five competitors with three small bunches of Alnwick Seedling, perfect in form and evenness of berry, also finely coloured; Mr. L. Jennings, Forest Lodge, Farnborough, was second with the same variety, smaller bunches, but good in quality; Mr. F. Lee was third with the same variety.

Baskets of black Grapes, not less than 12 lbs., Mr. J. Bury, gardener, Tewkesbury Lodge, Forest Hill, was placed first with six faultless bunches of Alnwick Seeding of good form, large in berry, and well finished; Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, closely followed with heavier bunches of the same variety, but not quite so good in colour; Mr. J. Taverner, gardener to Sir A. K. Macdonald, Bart., Woolmer Lodge, Liphook, was third with Black Hamburgh. Mr. G. Duncan, gardener to C. T. Lucas, Esq., Warnham Court, Horsham, was to the front in the corresponding class for white Grapes with splendidly finished Muscats, Messrs. W. Lane and W. Pratt following with admirable examples of the same variety. There were seventeen exhibits in these two classes combined.

Peaches and Nectarines.—These were staged in large numbers, and it was surprising to see how well coloured the majority were considering the season. The most successful exhibitor was Mr. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, who took first honours for a collection of six dishes of Peaches and six dishes of Nectarines, distinct, with large and well-coloured fruits of Crimson Galande, Dymond, Princess of Wales, Barrington, Bellegarde, and Princess of Wales Peaches; Victoria, Albert Victor, Lord Napier, Pine Apple, Rivers' Orange, and Dryden Nectarines. Second, Mr. Goodacre, with fine fruit of Bellegarde and Downshire Peaches; Rivers' Orange, Pitmaston Orange, and Violette Hâtive Nectarines. Third, Messrs. Rivers.

For four dishes of Peaches, distinct varieties, Mr. Divers was again first among six lots, the varieties being the same as in his previous collection. The dishes were even, and the fruit of capital colour. Mr. McIndoe, gardener to Sir J. Pease, Hutton Hall, Guisborough, was second, his fruit not being so even in size, Golden Eagle and Princess of Wales being best. Mr. Jennings, Farnborough, was third. For four dishes of Nectarines Mr. Divers again occupied the premier position with fine highly coloured fruits of Dryden, Spencer, Pine Apple, and Lord Napier. Mr. Goodacre was second, the fruit being smaller. Mr. C. J. Goldsmith was third. For one dish of six Peaches nineteen competed, producing a fine display. Mr. George Goldsmith, gardener to Sir E. G. Loder, Bart., Floore, Weedon, occupied the post of honour with large highly coloured Violette Hâtive. Second, Mr. W. Manning, gardener to G. Taylor, Esq., Margery Hall, Reigate, with Noblesse; Mr. Divers and Mr. Jennings equal third with Prince of Wales and Crawford's Early. Twelve staged in the class for six Nectarines, the best coming from Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Essex, a fine dish of Humboldt. Mr. G. Duncan, gardener to C. T. Lucas, Esq., Warnham Court, Horsham, who showed Pitmaston Orange, very large, was second; and Mr. J. Bury third. Nineteen competed for the prizes offered for best green-flesh Melon. Mr. Goodacre was first with Royal Horticultural Prize. Second, Mr. W. Sullivan, gardener, Fawkham Manor, Dartford, with Sutton's Imperial Green Flesh. Mr. C. Goldsmith, The Gardens, Polesden, Dorking, was third with the same variety. For the best scarlet-fleshed Melon there were seventeen entries. Mr. C. Waite, gardener to the Hon. Col. W. P. Talbot, Glenhurst, Esher, was first with Hybrid Scarlet; Mr. C. Goldsmith second with Bloxholm Hall; Mr. C. J. Goldsmith third.

Apples and Pears.—These on the whole were of fair quality. For twelve dishes of Apples Mr. A. Waterman was first with good specimens of Ecklinville Seeding, Stirling Castle, Peasgood's Nonesuch, Lord Suffield, Stone's Apple, Lady Henniker, Duchess of Oldenburg, Gravenstein, Red Astrachan, Quarrenden, Kerry Pippin, and Worcester Pearmain. Mr. J. Butler was second with grand examples of The Queen, Frogmore Prolific, Grand Duke. Messrs. G. & J. Lane, St. Mary's Cray, were third, Emperor Alexander being one of their best dishes. Mr. J. McIndoe, The Gardens, Hutton Hall, Guisborough, also had some fine fruit, but uneven in size. But this exhibitor took the lead for the same number of dishes of Pears, showing fruit of excellent quality, including richly coloured Clapp's Favourite and Williams' Bon Chrêtien, also immense Beurré Diel and Pitmaston Duchess. Mr. J. Butler was second; his best dishes were very fine Windsor, Beurré d'Amanlis, Beurré Goubalt, Louise Bonne, and Clapp's Favourite. Mr. C. J. Goldsmith was third. Mr. A. Waterman was to the fore with three dishes of Apples (ripe); Worcester Pearmain and Red Astrachan were very bright. Mr. F. Miller, gardener to J. T. Friend, Esq., Margate, and Mr. J. Butler were second and third respectively. Mr. Butler had the best three dishes of Pears.

Plums.—The prizes offered for Plums in three classes of four dishes each brought a good number of competitors with very fair fruit. Mr. A. Waterman was first with red Plums, having Pond's Seedling, Prince of Wales, Sultan, and Victoria; Mr. Thomas Lockie, Oakley Court, Windsor, second; and Mr. J. Butler, gardener to A. J. Thomas, Esq., Orchard Lane, Sittingbourne, third. Mr. T. Lockie was first with yellow and green varieties, staging Jefferson's, Washington, Golden Gage, and Guthrie's Late Gage; Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, was second; and Mr. J. Neighbour, gardener to E. J. Wythes, Esq, Bickley Park, Chislehurst, third; there were fourteen entries. For the four dishes of purple varieties, Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, secured first honours with even samples; Mr. H. W. Ward, second; and Mr. T. Lockie third. There were only four exhibitors in the class for two dishes of Figs, and these were only of ordinary merit. Mr. C. Ross, gardener to G. B. Eyre, Esq., Welford Park, Newbury, was first with Bourjasotte Grise and White Marseilles, followed by Mr. J. Crawford and Mr. R. Parker.

Tomatoes.—These were but poorly represented, only three collections of six varieties were staged. Mr. C. J. Waite, gardener to Col. Hon. W. P. Talbot, Esher, being first with large and even fruit. Mr. C. J. Goldsmith was a close second; Mr. J. W. Silver, The Norbury and Streatham Nurseries, third, Silver's Golden Queen being the most noticeable in this collection. Messrs. J. Carter & Co. offered prizes for two dishes of Tomatoes of the Blenheim Orange and Sandwich Island varieties. There were only two competitors, and in both the examples were small. Messrs. Sutton & Sons presented special prizes for nine specimens of Reading Perfection. Mr. G. H. Richards, Somerley, Ringwood, was a good first with large and handsome fruit; Mr. C. J. Waite second. Mr. J. W. Reed, gardener to E. Pettit, Esq., Weybridge, and Mr. E. Chadwick were third and fourth. Nine dishes were staged, and all were creditable.

A first class certificate was granted for a Melon shown by Mr. Brutton, Yeovil. It was stated to be the result of a cross with Victory of Bath and Hero of Lockinge, medium size, well netted, green flesh, and of exquisite flavour; it is named Brutton's Perfection. A similar award was made for Thames Ditton Hero, exhibited by Mr. W. Palmer, Thames Ditton House, the variety being apparently of the Victory of Bath type, and richly flavoured.

FLOWERS.—Gladioli, Asters, Hollyhocks, and other flowers were exhibited; also plants of early Chrysanthemums and Cockscombs. We have only space for the chief prizewinners, and must defer the publication of notes on the Gladioli we have received from "D., *Deal.*" Messrs. J. Burrell and Co., Cambridge, were the only exhibitors in the class for thirty-six Gladioli, and were awarded the first prize. In the amateurs' class for eighteen spikes Rev. H. H. D'Ombrain was in his old position, first; Mr. E. A. Weston, Colne, following. For twelve spikes Messrs. W. J. Jones, Larkall, Bath; W. H. Apthorpe, Cambridge; and S. T. Wright, Ross, were the prizewinners in the order named. Messrs. Webb & Brand, Saffron Walden; and Mr. F. Blandford, West Dulwich, had the prizes for Hollyhocks; Messrs. Saltmash, Janes, and Walters those for Asters. Messrs. J. Prewett, Hammersmith; A. Gibson, Halstead Place; and H. James, Norwood, were placed in the order named for indoor flowers. The prizes for Cockscombs fell to Messrs. T. Lockie, Oakley Court; G. Saunders, Charlewood Park; and R. Spink, Horley; all staging well. Messrs. Davis and Jones, W. Piercy, and G. Miles, Brighton, were successful, in the order named, with good groups of Chrysanthemums. Extra prizes were adjudged to Messrs. Paul & Son, Cheshunt, for a fine collection of cut Roses; to Messrs. Cannell & Sons, Swanley, for a splendid assortment of cut flowers; and to Messrs. J. Laing & Co., Forest Hill, for a grand collection of Begonias.

Miscellaneous.—Mr. C. Ross exhibited six large Smooth Cayenne Pines, which were much admired. Messrs. Thomson & Sons, Clovenford, sent a basket of Duke of Buccleuch Grapes, very large and well finished. Messrs. J. Cheal & Son had three dozen dishes of Apples. Messrs. G. Bunyard & Co., Maidstone, staged a larger collection, upwards of a hundred disbes of Apples, Pears, and Plums. Among the former Beauty of Batb, Bismarck, Grenadier, Lady Sudeley, Colonel Vaughan, Cardinal, and Domino were conspicuous. Some thirty branches of Plums and Damsons were shown by the same firm, the whole forming an interesting exhibit and merited the extra prize awarded by the Judges. A similar honour was aeeorded Messrs. J. Peed & Sons, Streatham Nurscries, for about sixty dishes of Apples, Grapes, and Plums, behind whieh were arranged Maidenhair Ferns, herbaceous flowers, and fruiting eordon Apple trees in pots. Mr. Will Taylor, Osborn Nursery, Hampton, had also a few young trees bearing fine fruits. Messrs. J. Laing & Sons, Forest Hill, exhibited young pyramid Apples trees about 3 feet in heigbt, and bearing large fruit. Messrs. T. Rivers & Son, Sawbridgeworth, contributed a highly interesting eollection of fruit trees in pots in the best of health, and well fruited. They were tastefully arranged on a half-circular table, and in front were numerous dishes of excellent Peaebes, Nectarines, Apples, Pears, Plums, Cherries, and Grapes. This exhibit came in for a large share of admiration.

Messrs. E. & F. Newton were awarded a first-class certificate for their Reform glazing, as also was Mr. Deards for his Victoria dry glazing, both systems being very good.

NATIONAL DAHLIA SHOW.

BEYOND the slight roughness apparent in some of the show and faney blooms traees of tbe adverse season were not very conspicuous at the Crystal Palace on the occasion of the National Dablia Society's Show on the dates above named. In size and colour tbe flowers were well up to tbe average, and the exeellence of the Pompon varieties, in themselves a charming feature, as well as the singles, compensated for any slight falling off that there may have been observed in the refinement of tbe larger blooms. Taken on the whole thc Show was, in fact, surprisingly good, as for many years Dahlia fanciers have not bad to wage so determined a battle with the elements as in the present wet and windy season. The manner in which they have triumphed over tbeir difficulties is of lasting credit to them, and the Dablia Society may congratulate itself on the excellence of tbe 1888 Exhibition after such a season. Details of the awards are appended, and tbe names of the varieties in each first prize stand are given, tbe names being read from left to right.

NURSERYMEN'S CLASSES.

Show and Fancy Dahlias intermixed.—Class 1, seventy-two blooms, not less tban thirty-six varieties or more than two blooms of one variety. This, tbe most important elass in the Show, produced four competitors and an excellent lot of blooms, though, as before noted, some of them were a little rough. The first prize went to Messrs. Keynes, Williams and Co., of Salisbury, wbose victory was a highly praiseworthy onc, their flowers being singularly fresh and bright. The blooms were perhaps a little lacking in size, but were redeemed by their excellent finish. Tbe varieties sbown were as follows:—Back row: Joseph Ashby, Royal Queen, Harry Keith (2), Duehess of Albany (2), Serapb, Colonist (2), sport from Gaiety, Mrs. Langtry, Mr. Spofforth, Rev. J. B. Camm, Thomas Hobbs, General Gordon, Madame Soubeyre, Gloire dc Lyon (2), Gaiety self, Hugh Austin, Rebecca, Gloire de Lyon, Mrs. Kendal, Harry Walton, and Mr. Glasscock. Middle row: William Rawlings (2), Clara (2), James Vick, Eclipse, Richard Dean, Mrs. Kendal, Burgundy, Buttereup, Nellie Cramond (2), Colonist, James Service, Julia Wyatt, Shirley Hibberd, Mrs. Gladstone (2), Harry Walton, King of Crimsons, Gaiety, Rosetta, Mrs. Jefferd, Hon. Mrs. P. Wyndham. Front row: James Huntley, Thomas Goodwin, Robina (2), Diadem, Hon. Mrs. P. Wyndham, King of Crimsons, Herbert Turner, Willie Garratt, Mr. J. T. West (2), Richard Dean, Henry Eckford, Geo. Barnes, Lustrous, Hugh Austin, Mrs. Dodds, Frederick Smith, Mr. Head, Mrs. Shirley Hibberd, Prince Bismarck, Frank Pearse, Miss Browning, James Cocker. Mr. Charles Turner, Royal Nurseries, Slough, was a good second, his stand comprising fine blooms of Mrs. Gladstone, Rebecca, Crimson King, Purple Prince, and R. T. Rawlings amongst others, but all were in capital condition. Mr. M. V. Seale, Vine Nurseries, Sevenoaks, was a moderate third, his blooms generally laeking size and finish. Mr. E. F. Sueb, Maidenhead, was fourth.

Class 2, forty-eight blooms, distinct, tbree competitors. A magnificent stand from Mr. Charles Turner (perhaps thc best individual stand in the Show) received the first prize in this important class. Excellent alike in size, form, colour, and finish, they were something for Dablia fanciers to inspect with delight, and young exhibitors to learn a lesson by. The following were the varieties shown:—Back row: Mrs. Gladstone, Jas. Vick, Georgina, Harry Keith, Hon. Mrs. Wyndham, Cbampion Rollo, Mrs. Rawlings, Mrs. Kendal, a seedling, Goldfinder, Purple Prinee, Diadem, Henry Walton, T. J. Saltmarsh, Burgundy, and Mrs. John Downie. Middle row: Willie Garratt, Mrs. Foster, Imperial, Prince Bismarck, Thomas Ridley, Royalty, Charles Wyatt, R. T. Rawlings, The Amcer, Crimson King, a seedling, Mrs. Douglas, Robina, James Cocker, Mrs. Jefferd, and Ethel Britton. Front row: J. T. West, Clara, Mrs. Harris, Mrs. Jefferd, Lady Herbert, a seedling, Flag of Trucc, Excellent, Mrs. W. Flack, Olivier, Walter, Mrs. S. Hibberd, Primrose Dame, Jos. Green, Charles Lidyard, and Mr. Harris. Messrs. Keyncs, Williams & Co. were seeond, tbeir best blooms being Rebecca, Gloire de Lyon, Rev. J. B. Camm, and Riehard Dean. Mr. M. V. Seale was a good third.

Class 3, thirty-six blooms, not less than eighteen varieties or more than two blooms of any one variety, seven competitors. Mr. J. Walker, Thame, Oxon, was adjudged the principal award for a fresh bright stand. The varieties were:—Back row: Mrs. Gladstone (2), Tbomas Hobbs, Royal Queen, James Cocker, Queen of the Belgians, Harry Keith, Grand Sultan, James Cocker, Hon. Mrs. P. Wyndham, Colonist. Middle row: John Wyatt, Hope, Tbos. Hobbs, John H. Keynes, Joseph Ashby, Wm. Rawlings, Flag of Truce, Burgundy, Mrs. Langtry, Lady Louisa Mills, Mrs. Harris, and John Bennett. Front row: Ethel Britton, Rebecca, N. F. Saltmarsh, Earl of Ravensworth (2), Royalty, Mrs. W. Slack, Peacock, Mrs. Jefferd, Flora Wyatt, J. Green, Mrs. Shirley Hibberd. Messrs. Saltmarsh & Son, The Nurseries, Chelmsford, took seeond plaee; their flowers were somewhat small, but otherwise good. Mr. W. Boston, Carthorpe, Bedale, was third, and Mr. C. Hockney, Greenfield House, Stokester, Yorks, fourth.

Class 4, twenty-four blooms, distinet, seven competitors. A good stand from Messrs. Saltmarsh & Son was adjudged the chief award in this class. The varieties shown were as follows:—Baek row: Henry Walton, R. T. Rawlings, Willie Garratt, Mrs. Gladstone, Mrs. Glasscock, Constancy, Harry Keith, and Earl of Ravensworth. Middle row: Mrs. Saunders, William Rawlings, Mrs. Langtry, Burgundy, Ethel Britton, John Standish, T. J. Saltmarsh, and John William Lord. Front row: Hugh Austin, Mrs. Harris, Shirley Hibberd, J. T. West, John Henshaw, Criterion, James Cocker, and Lady Gladys Herbert. Mr. G. Humphries, Kington Langley, Chippenham, was second; Mr. J. Walker tbird; and Messrs. Paul & Son, Cheshunt, fourth.

Class 5, twelve varieties, five competitors. Messrs. Rawlings, Bros., Romford, took the first prize with a very neat lot, the varieties being (baek row) Gaiety, Wm. Rawlings, Pelican, and Rev. J. Goodday; (middle row) Prince Bismarck, Mrs. Langtry, Egyptian Prince, and J. T. Saltmarsh; (front row) Sunbeam, John Hensbaw, R. T. Rawlings, and Prince of Denmark. Messrs. J. Gilbert & Son were a good second; Messrs. Cbeal & Son, third; and Mr. J. R. Tranter, Henley-on-Thames, fonrth.

AMATEURS.

Show Varieties.—Class 6, twenty-four blooms, distinct, two competitors. The first prize fell to Mr. Hy. Glasscock, Rye Street, Bishops Stortford. His blooms were of good size, fresh, and well finished, the varieties represented being—Back row: Nellie Cramond, Mrs. Gladstone, Wm. Rawlings, T. J. Saltmarsh, Colonist, Queen of the Belgians, Mr. Glasscock, and J. T. West. Middle row: Ethel Britton, T. S. Ware, Mrs. Harris, Thos. Hobbs, Miss Cannell, Prince Bismarck, R. T. Rawlings, and Burgundy. Front row: Prince of Denmark, Mrs. G. Rawlings, John Henshaw, Mrs. Shirley Hibberd, Walter, Royalty, W. H. Williams, and Mrs. W. Slack. The second prize was awarded to Mr. Wm. Mist, Ightham, Sevenoaks, Kent. His stand was irregular, Mrs. Gladstone, Burgundy, and one or two others being decidedly weak, but on the other band, W. H. Williams, Harry Keith, and Queen of the Belgians were good.

Class 7, twelve blooms, distinct, nine exbibitors. Mr. J. T. West, gardener to W. Keitb, Esq., Cornwalls, Brentwood, secured the first prize somewhat easily, the back row flowers being exceptionally fine, and the remainder bright and fresh. The varieties were—Back row: Harry Keith, R. T. Rawlings, Mr. Glasscock, and Mrs. Gladstone. Middle row: Miss Cannell, Prince Bismarck, J. T. Saltmarsh, and Mr. Geo. Harris. Front row: Prince of Denmark, Mrs. Shirley Hibberd, William Rawlings, and J. T. West. The second prize lot of Mr. T. Hobbs, Lower Easton, Bristol, were somewhat flat and rough, but Mrs. Jefferd, Emily Edwards, and Hon. S. Herbert were fairly well shown. Mr. W. H. Apthorpe, Albion Brewery, Cambridge, was a elose tbird, and Mr. G. Arnold, Leighton Buzzard, fourth.

Class 8, six distinct blooms. This was an exceedingly popular class, there being no less than eleven competitors. The premier prize was secured by Mr. H. Steer, Southwood, near Eltbam, who showed neat blooms of the following varieties:—Golden Eagle, Ethel Britton, George Dickson, Miss Cannell, Joseph Ashby, and John Nevill Keynes. The second prize went to Mr. W. H. Smith, Wanborough, Shrivenham, Berks, whose blooms were somewhat small, but otherwise good; and the remaining prizes fell to Mr. W. Seaman, gardener to J. Biggs, Esq., Westbury Lodge, Brentwood, and Mr. Oeock, gardener to Mrs. McIntosh, Havering Park, Havering-atte-Bower, Essex.

Fancy Varieties.—Class 9, twelve blooms, distinct, three competitors. Mr. J. T. West was first with an admirable stand, composed of the following varieties, bright and well-finished examples. Back row: Rev. J. B. Camm, W. G. Grace, Duchess of Albany, and Mrs. N. Halls. Middle row: Frank Pearse, Dorothy, Hugh Austin, and John Forbes. Front row: Salamander, James O'Brien, Mrs. Saunders, and Henry Glasscock. The second prize fell to Mr. Glasseock, who also showed excellently, and the third to Mr. Mist.

Class 10, six blooms, distinct, ten competitors. Mr. H. Steer was the most successful, being placed first for a neat stand composed of Peacock, Henry Eckford, Prince Henry, Lottie Eckford, Goldfinch, and Egyptian Prince. Messrs. Hobbs, Heeremans, jun., and S. Cooper, Cheltenham, were respectively first, second, and third.

OPEN CLASSES.

Show and Fancy Varieties Grouped by Colour.—Class 11, six dark blooms, distinct, eight competitors. First Mr. West with Jas. Vick, Rev. J. Goodday, Harry Turner, Prince of Denmark, Shirley Hibberd,

and Lord Chelmsford. Second Mr. M. V. Seale; third Mr. C. Turner, and fourth Mr. T. Hobbs.

Class 12, six light blooms, distinct, eight competitors. First Mr. C. Turner with Mrs. Gladstone, Flag of Truce, Mrs. Harris, Julia Wyatt, Mary Anderson, and Ethel Britton. Second Messrs. Saltmarsh & Son, third Mr. M. V. Seale, and fourth Messrs. Gilbert & Son.

Class 13, six tipped blooms, distinct, seven competitors. First Messrs. Keynes, Williams & Co. with Mrs. Kendal, H. Walton, Peacock, Mrs. Saunders, Fanny Sturt, and Miss Cannell. Second Messrs. Saltmarsh & Son, third Mr. J. Walker, and fourth Mr. J. T. West.

Class 14, six striped blooms, distinct, seven exhibitors. Messrs. Keynes, Williams & Co. were to the fore here, winning well with capital examples of Prince Henry, Jas. O'Brien, Hercules, Rebecca, Hugh Austin, and Rev. J. B. Camm. Second Messrs. H. Clark & Son, Rodley, Leeds, with smaller flowers, Messrs. Humphries and West being second and third.

Decorative and Cactus Varieties.—Class 15, six varieties in bunches of six blooms each, six competitors. The decorative Dahlias were shown in very fine condition, Mr. C. Turner's first prize stand being most attractive. The varieties were—Empress of India, Mrs. Hawkins, Lady Marsham, William Rayner, Juarezi, and Henry Patrick, the latter a very fine pure white. Messrs. Keynes, Williams & Co. were very little in the rear, showing amongst others a beautiful canary yellow named Honoria. Messrs. Cheal Bros. and M. V. Seale were the remaining prize winners.

Class 16, four varieties, five competitors. Mr. H. Glasscock, showing Mrs. Hawkins, Empress of India, Juarezi, and Henry Patrick, was easily first, Messrs. H. Heeremans, jun., R. Spinks, and J. T. West taking the remaining prizes in the order given.

Pompon varieties.—Class 17, twenty-four varieties, distinct. Pompons were very finely shown in this class, the flowers being perfect in form and colour, and not too large. These remarks particularly apply to the first prize blooms of Mr. C. Turner, his varieties being—Back row: Darkness, Juliette, W. Carlisle, Golden Gem, seedling, Favourite, Lady Blanche, and Gem. Middle row: Admiration, White Aster, Thos. Moore, Cupid, Isabel, Rubens, Rosalind, and Khedive. Front row: Mabel, Dandy, Leila, Ernest, Adonis, Don Juan, E. F. Jungker and Gazelle. Messrs. Keynes, Williams & Co. showed finely for second prize, and Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, were a close third.

Class 18, twelve varieties, distinct, eight competitors. Messrs. J. Burrell & Co., Howe House Nurseries, showed admirably here, and scored a ready victory with the following varieties. Back row: Isabel, E. F. Jungker, Mabel, and Rosalie. Middle row: Cupid, Favourite, White Aster, and Gem. Front row: Darkness, Comte von Sternberg, Butterfly, and Fanny Weiner. Mr. G. Humphries was an excellent second; Messrs. Paul & Son a good third, and Mr. John Henshaw, Rothamsted Cottage, Harpenden, fourth. These were all excellent collections.

Class 19, six varieties, distinct (amateurs). Mr. J. T. West was successful from eight opponents in this class, having Mabel, E. F. Jungker, Gem, Isabel, Little Nigger, and Leila. Mr. Glasscock followed, the minor prizes going to Mr. W. Harris, Broomfield, near Chelmsford; and Mr. R. Spinks, Victoria Road, Horley.

Single Varieties.—Class 20, twenty-four varieties, distinct. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, were unopposed in this class, and showed, taking the season into consideration, magnificently. Many great growers have failed utterly with single Dahlias this year, but the Crawley growers showed in their usual form. The flowers were not so large as they have been shown previously, but this ought to be considered a point of merit, large single varieties being objectionable. The blooms were splendidly set up, the varieties represented being—Back row: Excelsior, Amos Perry, Alba Perfecta, Queen of Singles, Mrs. Kennett, Albert Victor, Alfonso, and Brutus. Middle row: Primrose, Mr. Rose, Monte Christo, Mrs. J. Connick, Miss Linniker, Duchess of Westminster, Negress, and Eleanor. Front row: Duchess of Albany, Hugo, Enchantment, Paragon, Sunset, Formosa, Miss Gordon, and Victoria.

Class 21, twelve varieties, distinct, five competitors. This was more popular than the preceding class, and the flowers were again good. Messrs. Paul & Son, Cheshunt, were first, but the blooms were hardly so smooth as they should have been. The varieties were—Back row: Mrs. Kennett, White Queen, Canterbury Tales, and another. Middle row: Miss Gordon, Mrs. H. Whitfield, Harlequin, and Lutea grandiflora. Front row: Mrs. Boorman, The Bruce, Miss Henshaw, and Dulcina. Mr. Seale was a fair second; Messrs. Jas. Gilbert & Sons, St. Margaret's Nurseries, Ipswich, third; and Messrs. Keynes, Williams & Co., fourth.

Class 22, six varieties (amateurs), two competitors. Mr. T. W. Girdlestone, Sunningdale, won with Corney Grain, Maude Millet, Marguerite, Picotee, Daisy, and George Grossmith. These were all seedlings of 1887 and 1888, therefore additionally interesting. Mr. H. Glasscock was second.

Seedlings.—Three or more blooms of any new seedling Dahlia. First-class certificates of merit awarded to Messrs. Keynes, Williams & Co. for Fancy Dahlia Matthew Campbell; decorative Dahlia, Panthea; and Pompon Dahlias, Little Ethel, Whisper, Fairy Tales, and Eden. Mr. T. S. Ware, Hale Farm, Tottenham, for single Dahlias, R. C. Harvey, Florrie Fisher, and Mrs. Ramsbottom. Mr. J. T. West, for decorative Dahlia Beauty of Brentwood and Pompon Dahlia Dolly Keith. Mr. T. W. Girdlestone, for single Dahlias Daisy and Mikado. Messrs. H. Cannell & Sons, nurserymen, Swanley, for decorative Dahlia Yellow Juarezi. Messrs. J. Cheal & Son, for single Dahlias Victoria and Duchess of Albany. Mr. H. Glasscock, for single Dahlia Gertrude. Mr. T. Glasscock, Bishop's Stortford, for Aster Comet. Descriptive notes must be deferred.

Attractive stands, not for competition, were arranged by Messrs. T. S. Ware of Tottenham, and H. Cannell & Sons, Swanley.

URSINIA PULCHRA.

This plant, under the old and well-known name of Sphenogyne speciosa, was introduced about 1837, and is first described by Knowles and Westcott in the second volume of the "Floral Magazine," a very useful old book rarely seen nowadays. Under the same name it was figured in "Paxton's Mag.," 1839, page 77, and this is the name under which it is cultivated in gardens at the present time. The accompanying sketch



FIG. 27.—URSINIA PULCHRA.

(fig. 27) will give an idea of the value of this hardy annual for border decoration, as in spite of the unusually wet summer and early autumn we do not remember to have seen such an abundance of flowers as has been produced by the Sphenogyne. The seeds are sown in the open air along with the other annuals in early April; all that is required afterwards is simply thinning the seedlings to 6 or 9 inches apart, which is quite near enough, as they have a branching habit, each forming a well-shaped bush literally covered with its bright yellow flowers, the effect of which is greatly enhanced by the dark purple brown spot at the base of the rays and the rich dark disc. Its native country is so far unknown, Paxton states, that it was asserted to have been introduced from South America, and by some from South Africa. The latter guess is probably nearest the mark. It is not mentioned in Harvey and Sonder's "Flora Capensis," and may possibly be a native of the unexplored parts of

Namaqualand or the Ceres district. The variety sulphurea is not so beautiful as the type, the flowers being pale sulphur. U. anthemoides is a near ally of the above, differing in having a deep purple colour on the underside of the rays, smaller flowers, and more finely cut foliage. This is a very old plant, having been cultivated in 1795, and figured in the "Bot. Mag.," t. 544, under the name of Arctotis anthemoides.—D.

MESSRS. ALEXANDER DICKSON AND SONS, NEWTOWNARDS AND BELFAST.

NEW HYBRID PEDIGREE ROSES.

I HAVE just returned here from a few weeks' run through Ireland, north and south, and Scotland, including Glasgow, Edinburgh, and the Lake district, commonly called "The Trossachs." Perhaps I should here say that any of your readers who go as far as Edinburgh with gardening tastes should not miss the chance of seeing the Duke of Buccleuch's palace gardens at Dalkeith, half an hour's run from Scotland's beautiful capital. However, I hope to have an opportunity of referring occasionally, as time permits, to notes taken *en route*, so with your permission I commence with Messrs. Dickson's Newtownards nurseries. These nurseries are assuming a world-wide reputation as the home of Hybrid Pedigree Roses. Rather curious that these hybrids seem to do admirably in the United States, and already Messrs. Dickson have large orders from Brother Jonathan, but have not so far been as lucky as Mr. Bennett, the only other Hybrid Pedigree Rose raiser in the empire, who secured £1800 from Mr. Evans, of Philadelphia, for Her Majesty.

I propose specially to note those new Roses, but before coming to them I would like to transcribe a few casual notes made in my walk round with the energetic head of the firm, who now leaves the nursery business proper and Rose hybridisation to his son, who bears his name, and Mr. George Dickson, while he interests himself in high class farming and the breeding of a pure strain of Shorthorns on an adjoining estate of his.

The residence, booking, stores, and despatch offices are at the west end of the town, and although there are four nurseries, some distance asunder, stocked in the customary manner with Coniferæ, ornamental shrubs, fruit trees, Roses, deciduous trees, &c., I shall merely ask space for notes of that in which the glass structures are situated. These structures number about a dozen, ranging from 50 to 150 feet in length, and provided with all modern improvements in heating, ventilating, watering, &c. Some of these are very ingenious as well as economical. There is a large range of pits, at times heated by stable manure or other fermenting material, but with a series of piping to maintain the requisite temperature in case of need. Most people know how slow the work is of removing the sashes to empty and fill the hotbed stuff, and how handicapped the man with the fork is down in the pit.

Here the sashes can be removed from scores of pits or frames in five minutes, and not only that but the supporting framework which fits into grooves, one man emptying or filling with ease and comfort, can thus do the work of at least five. So on in every department, the object to be attained and the best method of securing it seems to be constantly studied. The heating arrangements seem almost perfect. Two large saddle boilers, much praised for their good points some years ago, had to be discarded for a large one of Witherspoon's "Red Rose" patents, which gives greater satisfaction, and consumes less than half the former fuel.

Messrs. Dickson grow enormous quantities for cut flower purposes to meet the demand at their large seed and general warehouse, Royal Avenue, Belfast, under the immediate supervision of Messrs. Watson and Hugh Dickson. They have developed in a surprising degree also the trade—the demand and supply—for ornamental and flowering window and small conservatory plants. Let me give a few illustrations that may be instructive. Narcissi, Hyacinths, Tulips, Anemones, and all flowering bulbs that keep and "travel" well come in usefully in season. I am glad to say they found an enterprising gentleman farmer, Mr. Mossop, in the Queen's Co., to grow several acres of the former for them very satisfactorily, to meet not only the Irish but American trade. For the whole twelve months of the year their demand for cut Roses, Tea, Bourbon, or Hybrid Perpetual never flags. This seems more or less common to all manufacturing towns. So of Carnations, Pinks, and Picotees. Gloire de Nancy is the favourite white Carnation, but it too splits the calyx. Fisher's W. P. Milner comes papery and poor here. Would you or any reader name a white Carnation as vigorous as Gloire de Nancy that does not split the calyx? Another showy outdoor favourite useful for cutting are Gladioli, including the hybrids of Gandavensis and Lemoine's. I have seen them here as fine as the best from salubrious Langport—enormous spikes—many raised locally. Cut the spikes as the first flowers open, and every bloom on the spike will fully expand and keep fresh for nearly three weeks even in summer.

Although the climate here is on an average 4° or 5° colder than in the south, their Hybrid Tea Roses, possibly from being budded on the Manetti, and subsequently rooting from the junction into the soil, are never killed in the winter; in fact, I observed a week since splendid blooms thus in the open. Here I may digress to say most of this firm's 100,000 Roses I observed were on the Manetti stock; and in a pretty long experience—Mr. Gilmour, junior, notwithstanding—I certainly never saw at the end of August such wonderful Roses, and, I may add, such vigorous growth. I was not surprised therefore to find on my return from Scotland some days afterwards this firm had first prizes in every class open to them, against all comers, in Dublin. Possibly the close proximity to the sea at Strangford Lough has also a modifying influence on the temperature. Thus far I have referred to the outdoor stock for supplying cut flowers, without mentioning two of Messrs. Dixon's specialties for the same purpose—Chrysanthemums and Dahlias. Both, in their several sections, are grown by the thousand. As to the former—curious, the demand is chiefly for white flowers—incurved, Anemone, reflexed and Pompon, and the supply is selected accordingly. At Dublin Royal Horticultural Society's Show a few days since those Dahlias I see had also premier honours. Coming to the indoor department the stock is grown on commercial principles. Take the warm Adiantum house—there are but two of A. farleyense or A. Pacotti (very dense) to 1000 A. cuneatum, because the latter will "travel" and keep while the former will not. Another house has hardy Palms in small pots for table or room decoration. Another again similarly 2000 dwarf Tree Ferns, Lomaria gibba, handy seedlings in 3½-inch pots. So of Asparagus plumosus. Of this and Ferns an average of 500 fronds are required per week. The next long house was devoted to Eucharis amazonica, in splendid health. Very singular, neither Mr. Dickson nor any of the firm believe in the existence of the so-called Eucharis mite. "They never saw it," and think what passes as such is generated naturally after the bulbs have begun to decay, from a low temperature, or too much water, or both combined. Their enormous stock was certainly a picture of health. Again we come to a Fern house; this time the very handsome Pteris serrulata major, Athyrium Goringianum, and Lastrea cristata, being chiefly the tenants. Lapagerias, white and rose, are largely required, as well as Stephanotis, Hoyas, Hibbertias, and Mandevillas. Lastly, passing over the customary greenhouse occupants, and a large stock of Bouvardias, Tuberous Begonias, Pelargoniums of all classes, Cistuses, Fuchsias, Gloxinias, Cyclamens, &c., we come to one of the longest houses for forcing and early-flowering Tea Roses, for which the demand in the early months of the year seems insatiable. Here Maréchal Neil comes first, then Messrs. Dickson's own seedlings—Pedigree, Miss Ethel Brownlow, and Lady Castlereagh, both very vigorous and free flowering; the former bright salmon pink, shaded yellow; the latter an effective rosy yellow. It is remarkable that this last, Lady Castlereagh, is one of the few Roses never attacked with mildew—a fact worth noting.

Before exhausting your space, or your patience, I conclude with naming three sets of Dickson's new Hybrid Pedigree Roses. The first sent out in 1887 consisted of Earl Dufferin, Lady Helen Stewart (specially complimented in my hearing by the Lady Lieutenant of Ireland, the Dukes of Abercorn and Leinster, and a brilliant suite a few days since at the Dublin R.H.S. Show), and Miss Ethel Brownlow, now to be found described in all the Rose catalogues. This year Messrs. Dickson introduced for public favour Caroline D'Arden, H.P., a cross between A. K. Williams and Marie Baumann, and if possible superior to either parents—a pure, massive, soft rose colour. The other was Lady Castlereagh, a Tea already referred to. Both had first-class certificates in Dublin, Glasgow, &c. This enterprising firm hope to exceed their former triumphs next season with Lady Arthur Hill, peculiar pyramidal shape, vigorous, and in constitution and perfume faultless; Jennie Dickson, a wondrously promising beauty, and T. W. Girdlestone, all H.P.'s; and probably Mr. Brownlow and Mrs. James Wilson, Teas. As your correspondent I have to thank this enterprising firm for the facilities and courtesy extended to me on the occasion of my visit to their establishments in Belfast and Newtownards.—W. J. MURPHY, *Clonmel*.

HORTICULTURAL SHOWS.

RUGBY.—SEPTEMBER 4TH AND 5TH.

IN conjunction with the Warwickshire Agricultural Society's Show for the present year, a Horticultural Exhibition was held at Rugby on Tuesday and Wednesday, September 4th and 5th. A comprehensive schedule was provided, and the exhibits were numerous in most of the classes, three large tents being filled with Grapes, plants, fruit, cut flowers, and cottagers' productions. The latter were unusually good, and most creditable to the district. Specimen plants were not so numerous as in previous years, but the groups in competition possessed unusual merit. That from Mr. J. Parker, Victoria Nurseries, Rugby, gained the premier award, and deserved the highest commendation for the good taste displayed in the arrangement. The foundation was chiefly Adiantums, with a background of Palm and Lilies, a few Dipladenias, Lilium lancifolium, and Ixoras being scattered about, with abundance of Francoas, the tall graceful spikes of which had a charming effect. Mr. T. B. Thomson was a close second with a well finished group, and Sir R. Moon was third for the brightest group of the three, but a trifle too flat, and wanting in finish at the margin. J. Marriott, Esq., had the best specimen foliage plants, including grandly coloured examples of Crotons Andreanus, angustifolius, and mortefontainensis. Cut flowers, fruit, and vegetables were all well shown, and the Committee, with their courteous Chairman, Mr. Linnæus Cumming, and the Secretary, Mr. Arthur Mason, must be congratulated upon the success which attended their efforts to provide a satisfactory and representative exhibition.

BATH FLORAL FETE.—SEPTEMBER 5TH AND 6TH.

A MOST satisfactory Exhibition of plants, fruits, cut flowers, and vegetables was held in the Sydney Gardens, Bath, on Wednesday and

Thursday last week. Five spacious marquees were filled with exhibits, and in addition a building was devoted to stands of flowers, the vegetables being arranged on tables extending for some hundreds of feet along a terrace parallel with the railway which passes through the gardens. The entries were very numerous, and competition in some of the classes extremely keen. Altogether it was an admirable Show, but the heavy demands upon our space this week will not admit of a detailed report, and only a few of the leading features can be noticed. To the efforts of the Chairman of the Committee, Mr. J. Chaffin, and of the Secretary, Mr. B. Pearson, much praise is due for the satisfactory arrangements made for the convenience of exhibitors and visitors.

Plants.—Fuchsias, as usual, were excellently shown, grand conical or columnar specimens 9 to 10 feet high and 3 to 4 feet across at the base loaded with flowers had a most imposing appearance in one of the marquees, but owing to being arranged in double lines they could not be seen to their best advantage. Such specimens constitute a show alone, and nowhere else are Fuchsias now exhibited so well or so numerously, though they furnish a welcome change from the conventional stove and greenhouse plants that become such familiar objects to frequenters of horticultural exhibitions. The leading prizes were secured by Mr. G. Tucker, gardener to Major Clark; Mr. J. Lye, Market Lavington; Mr. Snell, gardener to Mrs. Counsell, Bath.

Stove and greenhouse plants were not quite so extensively shown as on some previous occasions, but Mr. J. Cypher, Cheltenham, was the most successful exhibitor, having neat beautifully flowered specimens in first-rate condition. Mr. G. Tucker and Mr. W. Jones of Newport, who followed in the class for twelve plants, also had some well grown examples. A globular specimen of Schubertia grandiflora from the last named attracted much attention, as it is rarely seen at shows. The flowers are large, pure white, and suggestive of a fine Stephanotis. With ornamental foliage plants Mr. Cypher was again first for large specimens; Mr. W. J. Mould, gardener to E. C. Bryant, Esq., Bath, and Mr. W. C. Drummond taking the second and third prizes in the order named. In smaller classes Mr. E. Wills, gardener to Mrs. Pearce, Southampton, and Mr. W. J. Mould were awarded prizes for foliage and flowering plants.

Ferns were largely represented, and a tent was exclusively devoted to them, constituting one of the most interesting features in the Exhibition. Colonel A. M. Jones and E. J. Lowe, Esq., two noted pteridologists, contributed liberally from their extensive collections of British Ferns, and they shared the majority of the prizes between them in those classes. Many rare and beautiful varieties were exhibited, and Colonel Jones in particular had a most elaborate collection of hybrid or crossbred Ferns with their parents, and in some cases their descendants also. From this gentleman also came a large and beautiful non-competing group of Ferns occupying one side of the tent, and very conspicuous amongst the plants were the handsome varieties of Scolopendrium crispum, which formed a group at one end. Messrs. W. & J. Birkenhead, Sale, Manchester, also had a large group of healthy select British and exotic Ferns, which filled a stage extending the whole length of the tent on the opposite side from Colonel Jones's group.

Fruit.—A fine display of good quality fruit was provided, the substantial prizes offered having brought many competitors. With a collection of eight dishes (Pines excluded) Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, Warminster, secured first honours, showing three finely coloured bunches each of Alicante and Muscat of Alexandria, large Barrington Peaches, Hero of Lockinge Melon, Moorpark Apricots, Washington Plums, Elruge Nectarines of rich colour, and Morello Cherries. Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, was a close second; and Mr. A. Miller, gardener to H. W. Long, Esq., M.P., Rood Ashton, third. The class for twelve bunches of Grapes excited much interest, as though there were only two exhibitors the contest was a good one. Mr. Taylor, gardener to James Chaffin, Esq., Bath, was, after a short consideration, adjudged first honours for grand bunches of Alicante, Alnwick Seedling, Muscat of Alexandria (one bunch of enormous size), Gros Maroc of equally unusual size, Madresfield Court (handsome in bunch and berry but a little wanting in colour), and Black Hamburgh. Some of these required a little more time to finish thoroughly, but they were magnificent examples of good culture, and well deserved the honours awarded for them. Mr. Pratt was second, showing Black Hamburgh, Alicante, Muscat of Alexandria, Madresfield Court, Foster's Seedling and Lady Downe's, all of good size and colour, but not so large as the preceding. Mr. Taylor was again first with six bunches of Grapes, followed by Messrs. Nash & Gibson. The Black Hamburgh and Muscat of Alexandria classes were well filled, Mr. J. Chalk, gardener to G. Read, Esq., Salisbury, and Mr. Coates, gardener to Mrs. Miller, Westbury-on-Trym, taking the lead in each class respectively. Peaches and Nectarines were numerously shown, first prizes being won by Mr. G. H. Richards, gardener to the Earl of Normanton, Somerley, Ringwood; Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome; and Mr. G. Pymm. Plums, Cherries, Melons, Pine Apples, and hardy fruits were all well shown.

Cut Flowers.—One large tent was wholly devoted to these, the display being much superior to anything of the kind hitherto seen at Bath. Gladioli, considering the season, were remarkably well shown. The first prize, for thirty-six spikes in not less than eighteen varieties, was won by Messrs. Kelway & Son, Langport, who had a grand lot, some of these being Dr. Benson, Dercyllus, Anthony Waterer, Orbit, Celemene, E. Scribe, and several fine novelties. Mr. S. Dobree, Wellington, was a good second, and Mr. G. S. Walters, Calne, third. With twelve varieties of Gladioli Mr. S. Tottle, Taunton, was first; Mr. R. H. Poynter, Taunton, second, and Mr. J. Mattock, Oxford, third, all having very creditable stands. The first prize for twenty-four varieties of Dahlias was well won by Messrs. Keynes, Williams & Co., Salisbury, among these being perfect examples of W. Keith, Mr. Glasscock, Colonist, W. Rawlins, Miss J. Ashby, Mrs. Kendal, Clara, G. Dickson, Mrs. Gladstone, and Harry Keith. Messrs. Heath & Son, Cheltenham, were second, and Mr. J. Nation, Taunton, third, both having capital stands of blooms. For twelve varieties Mr. T. Hobbs, Bristol, was a good first, the second prize going to Mr. S. Humphries, Kington Langley, and the third to Mr. H. Heeremans. Single Dahlias were largely shown, the bunches in several instances being set up to the best advantage. For twelve varieties Mr. T. Truckle, gardener to T. Carr, Esq., was first; Mr. A. A. Walters, Bath, second, and R. Richards, Stapleton, third. Roses gave signs of having passed through much bad weather. Mr. Campbell, gardener to S. P. Budd, Esq., Bath, was well first for thirty-six varieties, among these being good blooms of Catherine Mermet, Captain Christy, Comte de Raimbaud, Star of Waltham, Mons. E. Y. Teas, Barthelemy Joubert, Heinrich Schultheis, Arthur Dickson, C. Lefebvre, and Marie Baumann. Messrs. Perkins & Sons, Coventry, were second, and Messrs. J. Cooling & Sons, Bath, third. The last named succeeded in winning the first prize for twenty-four varieties, Mr. Campbell being second, and Messrs. Perkins & Sons third. Mr. T. Hobbs was first for twelve varieties, Messrs. Heath & Son second, and Mr. W. J. Jones third. Several good stands of Verbenas were shown, Messrs. G. Cooling and Sons being first, Mr. J. Weston, gardener to the Rev. C. C. Layard, second, and Mr. J. Mattock third. With Zonal Pelargoniums Mr. J. Mattock was first, Messrs. Cooling & Sons second, and Mr. Cole, Bath, third. A remarkably fine lot of both German and French Asters were staged. With the former Mr. G. S. Walters was first, Mr. W. J. Jones second, and Mr. A. A. Walters third. For twenty-four French varieties Mr. W. J. Jones was first, Mr. Campbell second, and Mr. T. Evry third. The first prize for a collection of twenty-four varieties of choice cut flowers was awarded to Mr. G. Hobbs; Mr. J. Gibson, gardener to Earl Cowley, being a close second, and Mr. R. H. Poynter third. Special prizes were offered for a collection of cut flowers of hardy or herbaceous plants in not less than twelve varieties, and several remarkably interesting exhibits were arranged. Mr. A. A. Walters was first, Mr. J. Howse second, and Messrs. Heath & Sons third. Mr. C. Winstone, Clifton, was awarded the first prize in the class for hand bouquets, and fully merited it. Messrs. Perkins & Sons were second, and Mr. W. Brooks, Weston-super-Mare, third. For a table ornament, Mr. J. Cypher was well first, Mr. W. Jones being second, and Miss Lily Durbin third.

Vegetables.—These were crowded out from the tents, and had to be staged in the open air. In every class the competition was close and good, and rarely has such a capital lot of vegetables been seen together this season. The best collection of twelve varieties was shown by Mr. W. G. Pragnell, Sherborne Castle, who had excellent dishes of Veitch's Matchless Carrots, Autumn Giant Cauliflowers, Wright's Grove White Celery, Rousham Park Onions, Snowhall Turnip, Giant White Runner Beans, Veitch's Prodigy Peas, Globe Artichokes, Ellacombe's Parsnip, Tender and True Cucumber, and Sutton's Satisfaction Potato. Mr. G. H. Copp, gardener to W. E. S. Erle-Drax, Esq., Sherborne, was a close second; and Mr. T. Wilkins, gardener to Lady Theodore Guest, Henstridge, a good third. Special prizes were offered by Messrs. Sutton and Sons, Reading, and for these there was a strong competition. Mr. G. Copp was a good first, having Sutton's King of the Cauliflowers, Duke of Albany Pea, Sutton's Seedling Potato, Wright's Grove White Celery, Perfection Tomato, and new Red Intermediate Carrot, all in first class condition. Mr. T. Wilkins was second; and Mr. S. Haines, gardener to the Earl of Radnor, Coleshill, third. Messrs. Webb & Sons also provided the prizes in a class for a similar number of varieties, and for these again the competition was very keen. Mr. G. Copp was first, staging in this instance very fine Webb's Snowdrop Potato, Sensation Tomato, Improved Banbury Onion, Duke of Albany Pea, Grove White Celery, and Webb's New Defiance Carrot. Mr. A. Miller was a very good second; and Mr. S. Haines third. For three varieties of Tomatoes Mr. J. Fortt, but it was doubtful if these could rightly be termed distinct. Mr. W. Strugnell, gardener to A. R. Baily, Esq., Frome, was a close second, his varieties being very distinct and well shown. The best dish of Sutton's Perfection Tomato was shown by Mrs. W. Osborne; the second prize going to Mr. Richards, and the third to Mr. H. Prodgers.

Miscellaneous.—The non-competing exhibits comprised a magnificent group of cut flowers from Messrs. Sutton & Sons of Reading, representing hardy and half-hardy annuals, with Begonias and other plants. Such an effective display is rarely seen, and it attracted quite a crowd of visitors. Messrs. R. Veitch & Son, Exeter, had a large group of miscellaneous plants, as also did Messrs. R. Smith & Co. of Worcester; and Messrs. G. Cooling & Sons, Bath, had a beautiful collection of Tea Roses and Dahlias, the former uncommonly fine for so late a period in an unfavourable season.

OUTDOOR GRAPES.—These were so late in setting that it is doubtful if any will ripen this year. Where not badly affected with mildew they may ripen sufficiently to be utilised for wine-making. In any case it is unwise to neglect the Vines, as this may lead to a failure again next season. The laterals should be freely thinned, and those reserved stopped at one or two joints beyond the bunches. Also reduce the number of the latter where at all thick, this materially benefiting those left on the Vines. Neglect to thin out the wood and bunches, and neither will ripen. Stop the strongest young canes at a length of about 4 feet, and the weaker ones according to their vigour, all lateral growth being stopped at the first joint.

WORK FOR THE WEEK.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—The leaves are off or nearly so. To induce as complete a rest as possible the ventilators should be kept open constantly, and if the lights be moveable they may be withdrawn for a time. This will prevent undue excitement of the buds and have an invigorating tendency, especially as the border will become thoroughly moistened by the autumn rains. If the roof lights have been removed as advised in former calendars, they should not be replaced, but if they cannot be removed see that there is no deficiency of water at the roots of the trees, for though the impression prevails that dryness at the roots accelerates ripening of the wood, it is fatal to the development of the buds. The border should never be allowed to become dry at any time, but a much lessened supply of water will suffice when at rest than during growth. When the leaves have fallen the trees may be finally pruned. Only the strong growths that have not the points well matured should be cut back. In all cases be careful to cut back to a wood bud, not being deceived by a triple bud, as these in some instances form triple fruit buds, notably Grosse Mignonne and Noblesse. Ordinary attention having been given to disbudding, laying in no more wood than is necessary for the succeeding year's fruiting and for the extension of the trees, and removing fruited and other unnecessary parts after the fruit was gathered, very little pruning will be required. Thoroughly cleanse the house, and if the foliage has been infested with red spider or insect pests, dress the trees at once with an insecticide, as red spider will secrete itself in the rough portion of the bark and in the woodwork, applying the dressing thoroughly but carefully with a brush. If the trees have been badly infested it may be necessary to repeat the application before they are secured to the trellis. Remove the old mulching or loose surface soil, and supply fresh loam, having an addition of bonemeal and wood ashes in equal proportions to the extent of about a twentieth part. Partial lifting of weakly trees will be necessary, which should be done before the leaves have fallen, and in the case of trees that do not ripen the wood well, the roots should be carefully lifted and relaid in fresh compost near the surface, understanding that the drainage is perfect.

Succession Forced Houses.—Trees that ripened their crops in June will soon be casting their leaves, and should be treated similarly to those in the earliest forced house. Those that ripened their crops in July and August will now have the buds plumped, and the wood being ripe the roof lights may if moveable be removed so soon as the leaves give indications of falling, or towards the close of the month. If the wood does not ripen well keep the house rather close by day when there is sun, and open the ventilators fully at night. Any weakly trees that do not plump the buds may be assisted with liquid manure. Do not neglect the trees from which the fruit has been recently gathered, thinning out growths not required for future bearing, removing the bearing wood of the current season, ventilating freely, watering inside borders as may be necessary, and occasionally syringing the trees.

Late Houses.—Trees swelling their fruit will need the borders moist and mulched, and those with the roots in outside borders must not be neglected should dry weather prevail, and if carrying heavy crops weak liquid manure should be supplied. When all the fruit has been gathered remove the shoots that have carried the crop, and if the wood is not in a favourable condition as to ripening, gentle fire heat with a free circulation of air will be advisable; this more particularly applies to the late varieties. The midseason Peach trees will ripen the wood if the autumn be favourable, but if wet and cold they are benefited by gentle warmth and a free circulation of air.

MELONS.—Plants swelling their fruit will require considerable attention to guard against canker. Free ventilation, a little air being admitted constantly, with careful attention in watering and sprinkling, is necessary at this time of year, and affected parts should be rubbed quite dry with quicklime. Repeat the lime applications as may be necessary. Cracked fruits will need to be guarded against by the reduction of the moisture both at the roots and in the atmosphere. The temperature should be maintained at 70° to 75° by day artificially, which may fall to 65° in the morning. The house will need damping morning and afternoon when the crops are swelling, but only on bright days must the syringe be employed over the foliage, and that early in the afternoon. Earth up the roots of the later plants directly the fruit commences swelling, and feed with liquid manure or waterings through surface mulchings of sweetened horse droppings. Plants in pits and frames must be sparingly watered, and when necessary afford it early, so as to have the foliage dry before nightfall. Renovate the linings to finish off the crops directly the heat is found to be waning, and employ a covering over the lights on cold nights.

CUCUMBERS.—The temperature should be maintained at 65° minimum and 75° maximum from fire heat, with a rise of 10° to 15° from sun heat. Remove unhealthy leaves and old growths, stopping and training the others as may be necessary. Employ the syringe sparingly, only damping the foliage on bright days so that it may become dry before night. Damping will require to be done in the morning and again in the evening. Pot seedlings as they become fit, and keep them near the glass to insure sturdy growth, pinching out the growing point of those required for covering low trellises at the second rough leaf; others train with a single stem, securing to a small stick, rubbing off the laterals to the extent of stem required to reach the trellis. Be sparing with moisture to plants in pits and frames, maintaining the temperature above indicated by linings renovated as required, closing early, and employing a covering of mats over the glass on cold nights.

PINES.—Young plants that have been liberally treated show at this season luxuriant growth, and as the influences inducing this are decreasing both in force and duration, it will be necessary to take steps to prevent the growth becoming soft and attenuated. A drier atmosphere should be maintained in order to consolidate the growth, employing fire heat when unfavourable weather prevails. Syringe occasionally early in the afternoon on sunny days. When water at the roots is necessary, give a plentiful supply of weak liquid manure at the same temperature as the bed. Keep the bottom heat steady between 80° and 90°. Attend well to the ventilation, closing the house at a temperature of 80°, maintaining the night temperature at 65°. Encourage plants on which the fruit is swelling with heat and moisture, the night temperature ranging from 70° to 75°, and in the daytime from 80° to 90°, closing at 85°. Plants for starting into fruit early in the ensuing year should be selected from those which were started last March, and be brought together about the end of the month, where they can be rested for about six weeks.

PLANT HOUSES.

Gardenias.—Cuttings for next year's plants should be inserted singly in small pots at once. Select soft-growing shoots for this purpose, but not weak growths. If they are inserted in sandy soil and kept close and shaded they will not be long before they are rooted. If a few large plants are needed select some of the best of those that are now a year old, and place them into 8 or 9-inch pots. Pinch the shoots from time to time, and the foundation for large plants will be laid. With this object in view the grower must be prepared to forego the blooms that the plants would otherwise produce. With good treatment two-year-old plants should be 3 feet through them, and in condition for yielding a large quantity of bloom. If the earliest plants that have been in an intermediate temperature are pushed forward in brisk heat they will soon form flower buds. Give plants that have about completed their growth more air for a time, which is more than ever necessary in a season like this to ripen the wood, for this is the secret of good flowers and plenty of them.

Cyperus distans.—For groups in rooms, halls, in fact any form of decoration, this is one of the most ornamental plants that can be grown. It can be propagated by division, but the easiest and quickest method is from seed. This plant seeds freely. The seeds are small and of a light brown appearance when ripe. It is only necessary to dry them for a few days before sowing. They germinate as freely and quickly as the seeds of ordinary grass. When the seedlings are large enough they should be pricked an inch apart in boxes and grown in heat until they show signs of crowding, then be placed singly in 3-inch pots. They must not be grown too warm or they will draw up weakly. If seed is sown now sturdy plants will be ready early in the year for 5-inch pots. They soon push growths from the base, and by July will produce five or six flower stems, when they are very effective. This plant is very liable to red spider, and therefore must not be grown too warm or stood upon a dry base. They need abundance of water.

Dracænas.—All kinds, whether greenhouse or stove, that were raised from roots early in the year, should be placed without delay, if not already done, into 5-inch pots. The surface of the pots should be planted with Selaginella and Panicum variegatum intermixed. The latter should only be used for those that are retained in a warm house until they are needed for use. It is necessary to use rooted cuttings of Panicum. When the moss is established the plants will be better in an intermediate than a stove temperature.

Adiantums.—Plants that have been picked closely and kept cool for a few weeks should be placed into a temperature of 65°. They will quickly commence growth, and the temperature may then be gradually lowered to 60°, and will yield large quantities of fronds in the best of condition for cutting during the winter. As the fronds develope allow plenty of light to reach them, and give air daily to harden them.

THE BEE-KEEPER.

ADVICE ON BEES—A REVIEW.

"THANKS, Mr. Editor, for the advice given in your valuable journal. Since I abandoned the straw hive and the brimstone pit I have had a considerable quantity of honey."

The above may not be the exact words, but they certainly convey the meaning of many letters which appear in contemporary journals. More honey by abandoning the straw skep and brimstone pit! Did ever anyone hear such nonsense? The greatest takes of honey ever recorded were from straw hives; and as for the brimstone pit,

I have repeatedly shown that where bees are managed in a proper manner for profit they will increase, and what else can be done with the surplus than brimstone them after every bee-keeper has his proper number, and has learned how to maintain it and increase it, as it should be where profit is the aim? I can readily see where surplus bees can be saved under the present general system of management and mismanagement, but defy anyone to prove that either the straw skep, or the brimstone pit with all its horrors, tends to decrease the yield of honey. Mismanagement in many ways does this, and when failure takes place, as it does oftener than otherwise, the Editor again sagely remarks, "Your own fault," but cannot point the way to success. Let us take a serious view of two of the latest advices—namely on

UNCOVERING SUPERS AND CONTRACTING HIVES.

To uncover a super so as to lower the temperature of the hive at any time unsettles the bees and lessens their industry. Their work is instead of comb-building going on during the night time, to attend to keeping the brood warm and to daub the super over with propolis, and to have every chink filled with it, the result being an almost cessation of honey gathering because of the want of combs, which are generally made during the night, but with cooled supers can only be made during the day, while those that are so made are much discoloured by the extra crowding of bees necessary under the circumstances. Stupid as the above advice is, what are we to think of contracting a hive of ten frames to that of six? a size only about one-half a hive should be But what is to be done with the four frames removed teeming as it should with brood we are not told. That will probably be a mystery to the adviser himself. I trust no bee-keeper will ever follow that foolish advice, but rather increase the size of the body of the hive at this important time as well as keep supers always well covered, so that a uniform temperature is always maintained.

We have had hives when provided with empty comb below gather 20 lbs. in weight daily. Had such hives been contracted instead of expanded they would not have gathered 5 lbs. daily, and yet this is the advice given by the wise men of the day to their unfortunate and misguided brethren who, if able to help their bees to gather honey, would also be in a fair way to make money. On these subjects I have often touched, and thrown down the gauntlet but none has accepted the challenge of—A LANARKSHIRE BEE-KEEPER.

BEES IN THE WRONG PLACE.

I AM writing to ask you your opinion about some bees that have swarmed or rather made their home under the floor of my bedroom. It happened in this way. Twelve months ago last June a small swarm was seen to enter the air grating between my bedroom floor and the kitchen ceiling (which is under the floor). They seem to have gone in about 2 feet between the two joists. I did not attempt to get them out last year, but this year they have so increased that they become a nuisance, and what is more, being close to my front door, my children are not safe to go in and out. This last few days thousands of bees have been in and out. I believe they had honey a short time ago, but my impression is that they are being robbed by others, as some of them do not seem to know their way in, and they always seem so spiteful. What I want to do is to destroy the bees entirely, but how to do it am at a loss to know. I shall have to cut out the grating no doubt, as the bars are only wide enough apart to admit a bee. Any information respecting how to get rid of them will be thankfully received. We have plenty of bee-keepers about here, but none of them seem to know how to get the bees out, or what to advise me to do. If I pasted something over the grating and kept them in, how long would they live in that state, or would they die and cause a smell?—H. COSTER.

[In the above case the first thing to do is to ascertain the exact locality of the bees. This can be done by pushing an iron rod through the grating until it comes into contact with the combs, or by listening where the sound of the bees comes from, either by laying the ear to the floor or on a stick resting on it. After the right spot is ascertained, have a bee-keeper in attendance, and a tradesman will with a gimlet and keyhole saw cut the flooring on each side beyond the combs, then by lifting it carefully the same boards can be laid again, or if desirable cut close to the joists where the combs are (as they will not be in more than one space), then they and the bees can be lifted out easily and transferred to a frame hive. The floor will be little the worse by this manipulation if the work is done properly.

If the floor cannot be interfered with the bees can be brimstoned, and the safest way to do this in case of fire is to close up the grating except one aperture, blow in the brimstone smoke with bellows until the work of destruction is completed, or close the entrance entirely and bore a hole in the floor near the bees and puff smoke until the bees are killed; the small hole can be plugged up and will not injure the floor. There are chemicals that would destroy the bees if confined, such as cyanide of potassium, but this is dangerous. In such a dry place the bees would be thoroughly desiccated and no smell would arise from them, but a closer grating would be required to put in the wall, or the combs, unless removed, would attract other bees, and the trouble might continue for years to come.

Very likely the surmise about robbing is correct, and your letter unconsciously gives valuable advice. The spitefulness of bees is greatly increased when they find honey or sugar other than from flowers, and the nonsensical system of stimulative and outdoor feeding has the same effect. Bees in search of such sweets are very vicious, and sting readily a long way from their apiary. By closing the grating entirely the bees would undoubtedly die after some weeks or months, but that would be a cruel method of killing them.]

TRADE CATALOGUES RECEIVED.

Small & Co., 22, Lime Street, London.—*Catalogue of Dutch and other Flower Roots.*

W. Drummond & Sons, 58, Dawson Street, Dublin.—*Autumn Catalogue of Dutch Flower Roots.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Bulbs, Carnations, &c.*

Harrison & Sons, Leicester.—*List of Spring Flowering Bulbs and Roots.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Rose in Greenhouse (*Subscriber*).—You ought to have mentioned the name of the Rose that you erred in pruning. Perhaps the best thing to do now is to nip off the soft points of the shoots and let the other parts have all the sun and air you can to facilitate their maturation.

Small Worms in Soil (*C. O. S.*).—Letters arriving on Wednesday morning cannot be fully answered in the current issue. Give clear lime water, it will not injure the plants, and may be otherwise of service.

Dahlia British Emperor (*W. R. Pierce*).—The blooms were quite flattened in transit, but appear full and richly coloured. You should have sent specimens to the National Dahlia Show, or one of the meetings of the Royal Horticultural Society. The next will be held on the 25th inst. The Secretary's address is 111, Victoria Street, Westminster.

Twigs Falling from Yew Trees (*J. A.*).—The numbers of small fruiting twigs that appear to have fallen from the trees have perhaps been nipped off by squirrels, which are very mischievous at times. If there are no squirrels we are unable to account for the severance of so many healthy twigs, and the cause must be sought for on the spot.

Tulips for Sale (*Weybridge*).—We do not know the name of the sweet-scented yellow single Tulip to which you refer. The sweetest Tulip we remember is the Yellow Rose, but the flowers are double. The Duc Van Thol Tulips are the earliest, and thousands of them are sold in London about Christmas time. Others for sale may safely be chosen from catalogues according to the colours required and prices, the cheaper sorts answering as well as the more costly, the white Pottebakker, Chrysolora, Vermillon Brillant, with the red and yellow Keyzers Kroon are much grown, as are many others.

Peach Leaves Scorched (*G. T. E.*).—The Peach leaves appear spotted through the sun acting powerfully upon them whilst wet. Keeping the house close during the prolonged wet and dull weather would tend to make the leaf tissues thin, and on bright weather succeeding dull they would be unable to endure the sun, nor can such leaves perform their office of elaboration and assimilation. The older leaves

are cast as useless, whilst the younger, from being formed under more favourable circumstances, are retained. Their condition is entirely due to too close and moist an atmosphere.

Peristeria elata (*W. Bucks*).—You do very well in flowering so many Orchids in your "general utility house." Peristeria elata does not flower freely in a young state, but when it has attained sufficient strength it will flower freely, providing it is kept perfectly dry at the roots during the resting period. The flowers are produced from the side of its large pseudo-bulbs. If your plants are strong they ought to flower provided you ripen sufficiently their pseudo-bulbs. Possibly your house is rather too cool for their maturation. The Tetramicra should do well in the house, providing you suspend it in a light position from the roof. It is not difficult to grow and flower, and the conditions that suit Sophronites will suit it very well. If anything, it needs more sun to ripen it sufficiently. The flowers will be examined and named another week.

Potatoes Red Inside (*T. Shergold*).—Between the core and skin of a Potato is a sort of dividing line, generally about one-third of the half diameter from the surface or skin, and it is in this part that the red line in the specimen sent us appears. If the skin be very bright or deep in colour the internal line is proportionately so, but if the skin colour be pale, that of the internal line is fainter, if indeed there be any distinguishing colour worth note. Tubers formed at the surface are deeper in colour than those formed immediately beneath the soil. The lines are very decided in the surface tubers, but in those formed where due attention has been given to earthing with ameliorated soil there is no trace of colour in the tubers. The presence of colour is, therefore, due to the nearness or otherwise of the tubers to light. The colour is very decided in the cooked Potatoes, but disappears to a great extent after they have parted with the steam or water evaporated from them. This is a very interesting subject, and is due in both instances, in a great measure, to the presence or otherwise of light.

Tithe in Kind (*J. Burton*).—Curiously the same post that brought your inquiry as to when tithes ceased to be paid in kind brought us a book on the subject. It is entitled a "Key to the Tithe Question," by Rev. W. M. Hawkins, and is published by John Haddon & Co., Bouverie Street. We have not read it, but can see at a glance that it contains matter with which many persons cannot be expected to agree. We however cite what you want to know, and to which no one can object. "The tithe-tax was paid in kind down to the year 1837. The tenth pig, calf, cheese, milk, egg, sheaf, chick, Apple, Plum, &c. This was an exceedingly clumsy and unsatisfactory arrangement. It caused no end of ill feeling, strife, and conflicts. People are living now who have seen the farmer's men and the parson's throwing the turnip crop at each other, on the ground that the farmer had not fairly divided the crop, and was trying to cheat the parson. In the year 1836 an Act was passed to commute the tithe in kind to a money payment. In many instances this had been done by private arrangement from time to time, but after 1836 it was obligatory. The following is the introduction to the Act, written by John Meadows White, Esq., the solicitor attending on the Bill, published 1836 :—'The object of this Act is to convert all the uncommuted tithes in England and Wales into a corn rent-charge, payable in money according the value of a fixed quantity of corn, as ascertained from year to year by the average price of corn for the seven years ending at the preceding Christmas. The mode of making this conversion is, first, to find the gross average money value of the tithes of each parish for seven years ending Christmas, 1835; secondly, to proportion the amount of that value upon the lands of the several tithepayers; thirdly, to ascertain how much corn could be purchased with such amount; one-third of it to be laid out in Wheat, one-third in Barley, and one-third in Oats, at their average price ascertained by the weekly official returns of the price of corn for (in 120 markets) the seven years preceding Christmay, 1835; fourthly and finally, in every future year, to make payable the price of the same quantity of Wheat, Barley, and Oats, at the average prices, founded on a like calculation of the returns for the seven years ending at each preceding Christmas."

Indian Figs—Cochineal (*Foreman*).—You are quite right in saying the fruit of Opuntia vulgaris is so called, but it is not that species that supports the cochineal insect. O. vulgaris has been naturalised in the south of Europe, where, in Sicily, it has spread over expanses of volcanic sands and ashes where not a particle of vegetable soil exists. The fruit is about the size of a Fig, and red on the inside; it is very much relished by some, but varies in quality according to the climate in which it is produced. The Sicilians grow it extensively, and esteem it one of their most valuable esculents. It forms an important article of diet with the inhabitants of that island during three months of the year, though strangers generally consider it insipid. In the countries where it grows, the Prickly Pear is, on account of its rapid growth, much used for the formation of fences round lands and dwellings; and the quickness with which it grows, and its long stout spines, speedily render it such a formidable enclosure that neither man nor beast can penetrate it. O. Tuna also makes strong fences; and when the island of St. Christopher was divided between the English and the French, three rows of the Tuna were planted, by common consent, between the boundaries. Sir J. E. Smith states that the long and slender stamens of the flower are very irritable, and that, if a quill or feather is thrust through them, in the space of two or three seconds they begin to lie down gently on one side, and in a short time become recumbent at the bottom of the flower. The fruit yields a rich carmine pigment, which is used at Naples as a water-colour. O. cochinillifera, or Nopal, is the plant on which the cochineal insect feeds and breeds. It is in Mexico where the production of cochineal is carried on to the greatest extent, but it is also produced in the Canary Isles and in Java. The insect is the Coccus cacti. A number of the females are preserved during the rainy season; after the rains have ceased they are distributed over the plants; and, having deposited their eggs, speedily die. The eggs are hatched by the heat of the sun, and give rise to innumerable insects, the males of which are only in the proportion of one to a hundred or two hundred females, and, being provided with wings, they move about and fecundate the latter. After this period, the females, which before moved about, attach themselves to the plant, and increase rapidly in size, so that in the end their legs, antennæ, and proboscis are scarcely discernible, and they appear more like excrescences on the plant than distinct animated beings. They are now gathered by scraping them off by means of a blunt knife, or brushing them off with a quill, a feather, a squirrel's or deer's tail, a few being left to continue the race. They are destroyed by dipping them in hot water, or by the heat of a stove. In the former case they are afterwards dried in the sun.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. Wilson*).—1, Monarda didyma; 2, Centaurea montana; 3, Alstrœmeria aurea; 4, Stenactis speciosa; 5, Actœa spicata; 6, Campanula Trachelium. (*Reader*).—You should have sent a few particulars about the plants, no one can be certain of the names without some information. No. 2 resembles an Aristolochia; No. 3 the Samphire, Crithmum maritimum. No. 1 we do not even guess at.

COVENT GARDEN MARKET.—SEPTEMBER 12TH.

MARKET quiet, with little alteration. Plume lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 0	to 4 6	Lemons, case	10 0	to 15 0
Cherries, ½ sieve	0 0	0 0	Oranges, per 100	4 0	9 0
Cobs, 100 lbs.	0 0	0 0	Peaches, dozen	2 0	10 0
Currants (Red), ½ sieve	0 0	0 0	Pears, dozen	0 9	1 6
,, (Black), ½ sieve	0 0	0 0	Plums, ½-sieve	2 0	4 0
Grapes, per lb.	0 6	2 6	St. Michael Pines, each	3 0	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 2	0 0	Mustard and Crees, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	8 0	14 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Bruscle Sprouts, ½ sieve	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	3 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, buchel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 7
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s d.		s. d.	s. d.
Abutilons, 12 bunches	1 6	to 3 0	Margnerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	2 0	3 0	Mignonette, 12 bunches	1 0	3 0
Asters, dozen bunches	2 0	4 0	Pansies, 12 bchs	1 0	3 0
,, French, per bunch	1 0	1 6	Pelargoniums, 12 trusses	0 6	1 0
Azalea, 12 sprays	0 0	0 0	,, scarlet, 12 trusses	0 3	0 6
Bouvardias, bunch	0 6	1 0	Pinks, varions, 12 bunches	0 0	0 0
Calceolaria, 12 bunches	0 0	0 0	Polyanthus, 12 bunches	0 0	0 0
Camellias, 12 blooms	0 0	0 0	Pyrethrum, doz. bunches	2 0	4 0
Carnatione, 12 blooms	0 6	1 0	Rosee, Red, 12 blooms	0 6	1 0
,, 12 bunches	4 0	6 0	,, (ontdoor), 12 bchs	2 0	6 0
Chrysanthemums, 12 bl.	1 0	4 0	,, (indoor), dozen	0 6	1 0
,, 12 bchs.	2 0	6 0	,, Tea, dozen	1 0	2 0
Cornflower, 12 bunches	1 6	3 0	,, yellow	2 0	4 0
Dahlias, 12 bunches	2 6	4 0	,, (Moss), 12 bunches	0 0	0 0
Daisies, 12 bunches	2 0	4 0	Stephanotis, 12 sprays	1 6	3 0
Encharis, dozen	2 0	4 0	Stocks, 12 bunches	4 0	6 0
Gardenias, 12 blooms	1 6	4 0	Sweet Peas, dozen	2 0	4 0
Lapageria, 12 blooms	1 0	2 6	Sweet Sultan, 12 bunches	2 0	4 0
Lavender, 12 bunches	3 0	4 0	Tropæolum, 12 bunches	1 0	2 0
Lilium longiflorum, 12 blooms	2 0	4 0	Tuberoses, 12 blooms	0 4	0 9
			Gladiolus, 12 sprays	0 6	1 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Foliage Plants, var., each	2 0	to 10 0
Arbor vitæ (golden) dozen	12 0	24 0	Fuchsia, dozen pots	3 0	6 0
Asters, 12 pots	3 0	6 0	Genista, per dozen	0 0	0 0
Balsams, per dozen	2 0	4 0	Heliotrope, dozen pots	3 0	6 0
Begonia, various, per doz.	4 0	9 0	Ivy Geranium	0 0	0 0
Calceolaria, per dozen	4 0	5 0	Hydrangea, dozen	6 0	12 0
Chrysanthemum, doz.	4 0	9 0	Lilium, various, doz. pots	12 0	21 0
Coleus, dozen	2 0	4 0	Marguerite Daisy, dozen	6 0	12 0
Crassula, dozen	8 0	12 0	Mignonette, per dozen	4 0	6 0
Dracæna terminalis, doz.	30 0	60 0	Musk, dozen pots	0 0	0 0
,, viridis, dozen	12 0	24 0	Myrtles, dozen	6 0	12 0
Euonymus, in var., dozen	6 0	18 0	Nasturtiums, per dozen	3 0	6 0
Evergreens, in var., dozen	6 0	24 0	Palms, in var., each	2 6	21 0
Ferns, in variety, dozen	4 0	18 0	Pelargoniums, dozen	4 0	9 0
Ficus elastica, each	1 6	7 0	,, scarlet, doz.	3 0	6 0



LANDLORDS' FARMING.

By the removal of superfluous hedges and the filling in of ditches we avoid the expense of keeping them in order, and really gain a considerable area of land in a farm of two or three hundred acres. A well-planned farm, with trim hedges, and every field clean as a garden, such as we see in the Lothians, is a pleasant sight, and such farms may be regarded as patterns or examples of neatness. But before all things we must keep economy and practical utility n view. Every fence or hedge is a source of expense, and therefore there should not be one more of them than is positively necessary. In Suffolk every hedge has its parallel ditch, often of a depth of 6 or 8 feet and half a rod wide. It is only an exceptionally strong current of water in winter that could render such ditches necessary, and two or three of them should suffice for the superfluous rain water of an ordinary farm. We are gradually filling in all superfluous ditches and clearing away the hedges.

In cultivation and cropping there should be no difference between the practice of landlord and tenant. Both have the same object in view, and there can be only one method by which that object may be attained. Thorough drainage, tillage, pure seed, timely cultivation, all must be of the best. But there must be no expenditure of time or money for the sake of mere appearance. We do not require anything upon a farm for mere show, but just sound useful animals, implements, and buildings. We know more than one home farm with its magnificent homestead upon which several thousand pounds has been spent, much of it needlessly. Plain, unpretentious buildings, which lend themselves to the convenience of, and real wants of the farmer, are what we require, and there should always be an engine-house, or covered shed for horse gear, for motive power for pumping, grinding, chaffing, and corn threshing. In certain extensive repairs of homesteads which we have had in hand for the last three or four years, not a penny has been spent upon anything like ornamental work. Take, for example, a homestead of which the repairs were finished recently. The farmhouse, an old picturesque monastic building, with walls 2 to 3 feet thick, had so faulty a roof that it had to be re-tiled, the woodwork was painted, and that was all that was done to the exterior ; all interested suggestions of dressing the brickwork, a facing of stucco, colouring, &c., by the builder being quietly ignored. A moderate expenditure of paint, paper, and whitewash rendered the interior comfortable, and there was an end of the work. The barn, stables, piggeries, cow and cattle sheds, were simply restored to a sound condition, the yard enclosures, fences, and gates repaired, and a thorough coating of tar given to them and all exposed woodwork.

Buildings so restored to what is known as tenantable repair are done in the mutual interest of landlord and tenant. We often have reason to regret finding so many thatched buildings at old homesteads, which involve landlord and tenant in a periodical outlay for repairs, the landlord paying for the work and the tenant supplying the straw. Whenever it is possible corrugated iron is now used in preference to thatch, slate, or tiles, but it must not be forgotten that the rafters of an old roof are frequently unsuitable for covering with corrugated iron. A sound roof and floor are alike important for every farm building, and there can be no doubt that floors of asphalte or Portland cement kept thoroughly clean are an excellent preventive of swine fever.

It is in the animals of the farm that a landlord should do what is possible to set an example to his tenants. As a landlord's representative we do what we can in this direction, and unquestionably very much can be done for the improvement of ordinary live stock on a farm. Perhaps sheep are the most important, because they are the most profitable, and we find it answer best to keep select half-bred ewes, and to cross with Hampshire Downs. We have just purchased some excellent lamb tups of that breed at £5 a piece, using one for each fifty ewes. Of pigs, we find it answer well to have cross-bred animals, a medium Yorkshire and a Suffolk giving us excellent pigs. As we have said before, we regard pure bred Tamworths as likely to prove most suitable for the London market, for which porkers of 50 lbs. weight and not fat are required. Of cows a cross-bred animal between a Guernsey and Shorthorn is that which gives stock alike superior for the dairy or butcher. We know Guernseys are not easily to be had, but this difficulty is to be overcome, and it is quite worth while to take sufficient pains to secure a cross that has proved to be so profitable as this.

WORK ON THE HOME FARM.

Hardly a day passes without rain, and harvest work drags its slow length along. Wheat is being carted, and many stacks are finished and thatched, but the grain is not really hard, and very little threshing will be done till after Christmas. It is something to save the corn at all in such unsettled weather, and so far, we believe, we shall have a bright, full sample of Wheat when we do thresh it. Barley is sadly discoloured, and good malting samples will be rare and costly ; fortunate indeed will be the farmer who has them. Those who have a large breadth of Wheat will very likely find it answer better than Barley. We are now fast getting down the latter crop, for it is ready and must come however unfavourable may be the weather. All sorts of reports are rife about harvest work and prospects, many of them being very nonsensical. It is undoubtedly a difficult season, and work makes slow progress, but we do not find it more costly than it has been in other years. If we in the southern half of Great Britain despair of a successful harvest, what do northern farmers say whose corn is still green and full of growth? Yet every field and every crop affords evidence of first-class practice, and a stout effort to overcome adverse climatic influences.

If only we had a favourable change of weather the bulk of the corn should be in stack in the course of another fortnight. In any case much of the Barley will require care after it is mown, for the young layers have in many fields almost overwhelmed it, and it will have to be turned and exposed to sun and air to harvest it. Much care is required for this work in such unfavourable weather. Already have we heard of heating in Wheat stacks, nor can it be wondered at, for the bottoms of the sheaves contain so much green growth of weeds that heating is inevitable where stacking is done early. Yet what are farmers to do? If the Wheat is left out in the fields till the weeds are dead there is no small risk of sprouting grain, and it is just a choice of evils. If Wheat can be got into stack in a suitable condition in any favoured locality it will probably command a high price.

HAY-DRYING MACHINE.—Would you kindly favour me with the address of the inventor of the hay-drying machine. I think his name is Gibbs.—W. M.—[We do not remember the address desired. Perhaps some of our readers may be able to supply it.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. September.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperatnre. Max.	IN THE DAY. Shade Temperatnre. Min.	IN THE DAY. Radiation Temperatnre. In sun.	IN THE DAY. Radiation Temperatnre. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Snnday 2	30.050	53.5	51.1	S.W.	56.9	62.7	53 8	78 4	52.7	0.074
Monday..... 3	29 970	61.3	59.5	S.W.	57 3	70.7	58 1	106.6	57.3	0.228
Tnesday 4	29 999	57.3	54 4	N.W.	57.7	67.2	52.6	107.2	47.6	0.056
Wednesday.. 5	30.081	60.6	58.2	W.	58 1	65.6	56.8	82.3	53.4	—
Thursday.... 6	30.033	61 7	58.3	S.W.	58.1	65.2	58.2	107.8	46.2	0.032
Friday 7	30.046	57.0	52.7	W.	55 6	65.2	48 4	112.6	44.1	0.137
Saturday 8	30.385	53.9	49 8	N.	56.8	60.5	46.3	106.9	41.1	—
	30.081	58 6	55.6		57.2	65.3	53.5	100.3	50.8	0 427

REMARKS.

2nd.—Overcast and showery all day.
3rd.—Overcast in the morning, bright till 3.30, then heavy rain to 4.30, and damp afterwards.
4th.—Cloudy early, fine bright day, dull evening and night.
5th.—Rain in the small hours, cloudy all day.
6th.—Dull and drizzling till noon, then fine and bright.
7th.—Generally bright, with occasional showers.
8th.—Bright morning, fair afternoon, spots of rain in evening.

A showery and rather dull week. Temperature about the average.—G. J. SYMONS.

GUMMING IN FRUIT TREES.

GUMMING differs from canker in being attended by a discharge, the sap of trees where gumming is present abounding in astringent constituents. In canker the parts affected are rarely ulcered or accompanied by a discharge, the sap containing a quantity of free acid. Canker, however, is a form of extravasated sap, mainly confined as regards plants cultivated for their fruit to varieties of the Apple and Pear. If there be no discharge in canker there is an enlargement of the vessels of the bark at the commencement of the malady. The attack is almost invariably accompanied by a swelling, largest in the Apple, and to a lesser extent, yet always present in an attack of the disease on the Pear. When Elms and Oaks are affected sometimes no swelling occurs, and in true canker of the Peach it is not preceded or accompanied by swelling of the affected parts. Extravasation, therefore, in canker is internal, and there not being any discharge it is proposed to exclude it from this investigation.

Gumming is confined for the most part to the Peach, Nectarine, Plum, and Cherry. Almonds and Apricots are also affected by gumming, and so also are many other trees whose exudations are gummy or resinous. Whatever may be the predisposing cause of the rupture of the sap vessels and the resulting discharge, the substance formed is gum quite as much so as gum arabic or gum tragacanth, only differing in character with the producing subject, though many of the resins and gum resins are not produced by disease. The disease known as gumming is, according to scientists, highly contagious, and is caused by a fungus named by Professor Oudemans Coryneum Beijerincki. The fungus by its mycelium developes a ferment, penetrating the cells and transforms the contents, particularly the starch granules, into gum. One peculiarity of the ferment is its penetration of living cells—viz., those of cambium, and changing or modifying their protoplasm, forming tissues with new properties. The tissue so formed sooner or later secretes the ferment and changes the cell contents into gum. A singularity of the disease is that the fungus causing it cannot penetrate the bark. Laceration, at least abrasion, of the bark must take place before the germs can enter. That or those are common injuries arising in Nature and culture. "But," asks Plowright, "how do the spores which are undeveloped in the viscid gum gain access to them? They cannot be blown there by wind is obvious. If the gumming occurs upon the upper branches (which is rarely the case) of course they may be washed down by rain or syringing; but how do they spread from tree to tree? Obviously, they must be carried—most probably by insects." Unquestionably. Why not ants? They usually swarm about trees liable to gum, and they quickly find out any abrasion or lacerations of the bark caused by trimming the trees, nailing or tying the growths, evidently relishing the juices of the trees so unsealed; indeed, they revel on plant and insect secretions.

Happily the disease never attacks healthy trees. Ants or insects of any kind may visit abrasions and lacerations without gumming resulting. The virus may be abundant in one tree without danger of its spreading next if it is healthy. The fungus seems impotent until the host plant presents a fitting nidus. It is not enough to introduce gum virus, abrasion and laceration are equally ineffective; disorganised tissue must exist before the fungus can spread. Plethora, or that state of a plant's excessive vigour in which the sap is formed more rapidly than the circulatory vessels can convey it away, must have been induced, and when that occurs rupture is inevitable. Fungus may be brought by insects, and so gain free ingress by reason of the rupture. If so, is it a cause or effect? Scientists insist (and rightly) that if there were no fungus there would be no gumming, and it is the cause of the disease. Keep the fungus away, and what? The tree will make a clean and healthy growth, perfect fruit buds, storing food in well ripened wood for the insuring of good set, a satisfactory stoning, and perfecting of a profitable crop of fruit. The fact is the other way, for the fungus can no more be kept from attacking a tree in a condition favourable to its existence than a healthy tree can be kept from effort at reproduction. The fungus, therefore, is not to the cultivator a first, but an after consideration, consequently it need not cause anxiety when the curriculum of treatment is not such as to create disorganisation of the host plant's tissues—a necessity of the fungus which scientists, if I understand their meaning rightly, do not question. Fungoid disease can only subsist on food essential to its perfecting, which depends on destruction or change of the elements appropriated to its use. If the scientist pins his faith to the fungus as the sole cause of the disease it is allowed that the disease is more likely to attack trees under certain conditions, and its virulence corresponds in degree with the elements or material available for transforming into gum. On attack, a tree in ill health will suffer more from the effects of the disease than one more healthy. In combating the disease the steps taken are preventive and remedial. The first are directed to sanitation and other precautionary measures essential to the health of the tree liable to attack, or avoidance of the agent by which the disease is fostered.

A knowledge of the disease is of primary importance in assigning predisposition and inherent tendency a place. Predisposition may arise from various causes, but the chief is overluxuriance, whether induced in trees favoured by Nature through soil and climate, or culturally by soil too richly manured. Soil exerts considerable influence in the predisposition of trees to gumming; the least disposition to the disease is on the oolitic formations, and greatest on alluvial. Siliceous soils favour the disease more than clays. Inherent tendency is obviously resolvent into the agency by which perpetuation or reproduction is effected. The disease is common enough on natives of the genus Cerasus and Prunus, induced perhaps by a period of moist warm weather followed by cold, the sap being then in excess of the evaporation, and the circulatory organs become disorganised, the sap stagnates and contracts, and rupture follows on a return of milder, moister weather. Culturally, plethora is induced by location and condition of soil, and by cultivation itself, of which instances may easily be observed in most gardens; but we must look a little closer if we are to make any real effort in eradicating the disease, and begin at the beginning.

The disease, as before stated, is common to wild as well as cultivated trees. The predisposition is natural, and the inherent tendency coherent. It prevails largely on Sloes and wild Cherries; indeed is common to all the species and their varieties, cultivated or otherwise, of the genus Cerasus and Prunus; therefore it is a necessity to remove these from the neighbourhood of an orchard or fruit garden, since the disease-producing insects and fungoids are fostered by them, consequently certain to spread to ill cultivated trees of kindred affinity. Perhaps no tree is more subject to lose large branches from disease than the common Laurel, which is very common in the immediate vicinity of fruit trees in private gardens, and many other species and varieties of the Plum and Cherry family are planted to form ornamental and sheltering belts or shrubberies about gardens, and not infrequently adjoining the fruit tree quarters. They are unquestionably useful as shelter, but it does not alter the fact that a whole fruit garden of flourishing trees may be ruined in a few years by the injudicious introduction

into an adjoining border or shrubbery of such questionable trees as Almonds, Cherries, and Plums. The blossoms are lovely, no doubt, but greater "sinners" in respect of gum it is not possible to find. They are forced into growth by the free root action of the stocks on which they are worked and the result is plethora, and concomitantly most, if not all, the insect and fungi diseases to which trees cultivated for their fruit are liable.

The stamping-out process needs carrying further. No stock should be used which is originated from stone, sucker, or layer of a diseased parent. That may be impracticable, but there is a difference between propagation from a stock that exhibits traces of disease and an apparently healthy one. It is not sufficient to make sure, so far as careful selection can make it, of healthy trees for stocks, equal care must be exercised in the selection of buds and scions. G. Abbey.

(To be continued.)

TOMATOES IN WINTER.

Outdoor Tomatoes are particularly scarce this year, and all that are nearly ripe on the approach of frost will doubtless be gathered and suspended in warm houses. That fruits cut in a green state and ripened in heat are scarcely so good as those left on the plants till nearly or quite ripe I readily admit, and in any case it is advisable, where possible, to grow a few plants for fruiting during the winter and till more are raised and fruited next spring. Those who, like myself, anticipated a failure in the open, will have, it is hoped, taken more care of any plants they may have under cover, and also forwarded more in pots ready for placing under glass in close succession to exhausted Melons and Cucumbers. We had a few late-raised seedlings which, about the middle of July, were shifted into 13-inch pots and set in a sunny position. Early in August half of a Cucumber house was cleared and the Tomatoes introduced. The growths were thinly trained over the roof and all side shoots kept rubbed out. At the present time several fine clusters of fruit are set on each plant, and, all going well, plenty of good fruit will be cut from them throughout the winter.

Tomatoes, in common with winter Cucumbers, are all the better for having a good and early start, and rather than have to commence now with young plants newly struck, or seedlings, I would much perfer to put new life into a few old plants in pots. These may be freely cut back, this inducing the formation of numerous strong young growths, which soon arrive at a bearing state. A shift into fresh pots is not necessary nor advisable, but much of the old surface soil may be picked away from the roots, and good turfy loam, with old Mushroom-bed manure in equal quantities, and a liberal addition of superphosphate of lime, added. If the start has to be made with either cuttings struck in gentle heat or seedlings, they may first be potted off in pairs in 6-inch or rather larger pots, and from these, before they are drawn or root-bound, shifted into 12-inch or rather larger pots. A moderately good loamy compost, or say a mixture of two parts turfy loam to one of either leaf soil or old horse-droppings, best suits them, and they ought to be potted rather firmly, a good space being allowed for a top-dressing later on. In whatever manner the plants are prepared, or whether old or young plants, it is unwise to plant them in a rich mound of soil, as much heavier crops are obtained from plants in pots set on a bed of fairly rich soil. Either old Melon or Cucumber beds are capital sites for Tomatoes in pots, the latter being set nearly on the surface, or only just deep enough to bury any side drainage holes there may be. The roots soon take possession of the food supply in the bed, while the pots act as a check to rank unfruitful growth. Any without this available rich root-run will require much more liberal treatment in the way of top-dressings, plenty of water and liquid manure, and if well attended to in this respect will produce remunerative crops.

It is not from want of good attention, however, that many fail with winter Tomatoes, but rather from being over-zealous. They either give too much heat or too much manure, or perhaps the two together, the result being very rank or very abundant growth, accompanied with few or no fruits. Near to the glass the plants ought always to be grown, and thinly, and on no account should much manure be given at the outset. First get a good crop set, and then feed away to your heart's content is my advice and that of other experienced men. There is no real necessity to confine a plant to a single stem, especially when the roots have access to a bed of soil and manure underneath. On the contrary, several branches may be laid in provided each has good space and is kept free of all side shoots. These main branches ought to be trained fully 12 inches apart, and supposing the plants are set near the centre of a long low roof, as in our case, the shoots may be taken both up and down from the same plants. When it is desired to grow Bouvardias, Poinsettias, forced bulbs, fine-foliaged plants, Ferns, or other plants under the Tomatoes, the main branches of the latter ought to be trained not less than 18 inches apart, and if rank foliage is formed this also should be slightly reduced in size, or everything underneath will be unduly shaded. In any case all superfluous growth should be removed as fast as it forms, but it is unwise to stop the leading growths while there is roof space that may be covered.

Many persons succeed in covering their roofs with fine healthy plants, every detail but one being well understood. Where they err is in maintaining a higher temperature than is needed or suitable for Tomatoes. Stewed up in a house more suited as far as temperatures are concerned to Pine Apples, the trusses of flowers are certain to be weakly and devoid of pollen, and a good set is an impossibility. The other extreme, or a greenhouse temperature, is also to be avoided. We find a fairly well heated house is needed, much the same amount of fire heat being given as ordinary stove plants are supposed to require. This, however, must be accompanied with air, little or much according to the external temperatures, some being left on all night in mild weather. This favours the production of strong flowers, and which if smartly tapped towards mid-day, or even syringed, rarely fail to set. At the present time not less than 9 inches of top ventilation is left on the Tomato house every night, but less will be given in colder weather or when we wish to forward the fruit more rapidly. I am no great stickler for very regular or even temperatures either by night or by day in the fruit houses generally, but always prefer to let them drop somewhat rather than heat the pipes excessively. I hold that the temperatures for Tomatoes may safely range from 45° to 60° by night with an increase in the daytime of from 5° to 10°. A house kept at these figures does not need to be damped down often, nor the plants syringed in order to keep down red spider. If the most troublesome pest, a small white fly known as aleyrodes, is prevalent, nothing but frequent and gentle fumigations will rid the plants of it. When fumigating care must be taken not to use too much hot coal or coke in starting the smoke, and on no account should it be allowed to burn strongly, or all the flowers expanded and perhaps some of the buds will be crippled.

I have tried a considerable number of varieties for winter culture, but found none to set so well as the old Red and Dwarf Orangefield. Other corrugated or ribbed varieties generally set more regularly than the smooth round-fruited Tomatoes, but if good plants of any of the latter are available I would unhesitatingly start with them rather than wait longer for the more sure setters. Hackwood Park, Carter's or Sutton's Perfection, Dedham Favourite, Webb's Sensation, Hathaway's Excelsior, or any other favourite variety can be made to produce good crops of fruit, these being of excellent quality and certainly more handsome in appearance than the ribbed varieties. The smaller Plum-shaped varieties, though good croppers, are not nearly so profitable or so good in quality as the varieties I have named.—W. Iggulden.

AN EXPERIMENT WITH EUCHARIS GRANDIFLORA.

I have a good number of rather fine plants of this favourite flower, and when I took charge of these gardens last spring twelvemonth I found the plants all in good health, and had apparently been well cared for by my predecessor. I, however, was told by my employer that six of the largest plants, purchased at an auction sale some years before, had failed to flower even once since they had been in his possession, though the other younger plants flowered fairly well. Of course, being a "new comer," I was asked the reason of the failure, and could only suggest a cause at that time. Some gardeners to whom he had shown them pronounced them a bad sort, as if there were worthless examples of this Eucharis in cultivation, a circumstance I had not before heard of. However, I found that the usual treatment failed to induce these six plants to flower, and therefore decided on the following experiment.

The plants were shifted from the stove to the temperature of an intermediate house, and in a fortnight to that of the greenhouse for a like period, then finally placed outdoors under the shade of some standard Apple trees. An hour or two's sun reached them both in the morning and afternoon. There they remained for two months, or till the end of August. The pots stood upon boards laid on coal ashes, so that the little water they had could freely pass away, and beyond the leaves losing some of their dark green colour I could not perceive any injury arising from this somewhat severe treatment; but certainly the plants did not grow, although the weather was warm and dry. In the meantime I had been preparing a house for winter Cucumbers, in which was a bed of

manure and leaves for bottom heat. When this was ready the plants were taken there and for a time placed on the bed, and afterwards half plunged in it. They were carefully watered and given liquid manure twice a week, also syringed daily. After a few days it was surprising to see how the plants revived, and it was not long before I had the satisfaction of seeing flower spikes appear. Altogether there were twenty-one spikes of four flowers each, and nine of three flowers, or thirty altogether. This summer the plants have been treated in a similar way, but with two weeks less time outdoors owing to the cool and damp weather, and they have even flowered better, for they have produced thirty-seven spikes of bloom, all large and perfect flowers.

I attribute the cause of failure, in the first place, to the plants being overpotted in their young state, the size of pots being what are called sixes; and secondly, from their not having a perfect and lengthened period of rest, a condition much more difficult to secure with plants in large pots than in smaller sizes, and I think it has been well proved that the Eucharis will flower more freely and at regular periods when the pots are both full of bulbs and roots, even if the latter are almost in a cramped condition, provided the plants are well supported by a suitable amount of heat, moisture, and stimulants; but in this case I concluded that nothing less mild than an enforced cessation of growth, brought about by the treatment described above, having due regard for the health of the plants, would attain the object aimed at, which proved to be successful. I should like my readers to bear in mind that I do not put this before them as a mode for general adoption, because the Eucharis can be successfully grown and flowered without it, but it is well to know that this plant, though a heat-loving one, will bear something different than the orthodox treatment, and, as in this instance, with satisfactory results.—THOMAS RECORD.

SMALL BORDERS FOR VINES.

ON page 218 "W. S." records interesting experience on growing Vines successfully in small borders. That large borders formed of "elaborate mixtures" have proved satisfactory to the makers of them, healthy Vines and fine Grapes resulting, goes without saying; yet it is questionable if there are not as many failures as successes if we take a broad glance of the subject. There can be little doubt that a great deal of money and labour have been expended in making Vine borders that might have been saved with advantage to the owner, gardener, and Vines. No one can travel far or inspect many gardens without being conscious of that fact, though he may and will come across excellently grown Vines and splendid Grapes now and then, the outcome of care in border preparation and good general management, especially the latter, because it is certainly true that one gardener will grow far better Grapes on Vines in what is regarded as an inferior border than another will when the most costly and elaborate provision is made for their roots.

Some soils are naturally unsuitable for Vine culture. They may be too dry and poor on the one hand, or heavy and wet on the other. But the poor can be made rich and the heavy porous by suitable additions, without clearing the entire mass away to a depth of 3 or 4 feet, and a width of 5 or 6 yards, filling the whole huge chasm at once with turfy loam carted a distance of perhaps two or three miles or more, with other mixtures considered essential for the purpose in view. The latter plan may answer, has answered, and it certainly ought to answer, but it has nevertheless often failed. It can scarcely be doubted that tons of soil have been carted out of gardens and tons more brought in, while that introduced has not been so good for the purpose as that turned out. The new may answer for a few years or it may not, for it is quite a mistake to imagine that all kinds of turfy loam remains so, for the turf decays, leaving often a close bed of silt. A narrow border of good sound wearing soil is, as a rule, much better for Vines than is a needlessly deep and wide bulk of "turfy loam," so much of which is essentially and quickly perishable.

It must be known to many that large new borders made at great labour and cost have not been satisfactory. I have assisted in making some and in clearing them out again, the experience teaching a lesson that was not entirely lost. In one instance a "splendid" border was made 4 feet deep, 7 yards wide, and 60 long, all the old soil wheeled out and new brought in. It would have been better if the old had not been touched, or at least if a barrowful of it had not been removed. This was proved to demonstration, for a Vine was "stuck in" at the end of the house in the natural soil, a narrow strip 2 feet wide between the wall and the walk, and that Vine produced more than thrice the weight of Grapes than any other Vine in the house did over a series of years, and it was notorious that those on Vines in the regular border shanked seriously while the other did not. Soil that will grow a heavy crop of Potatoes of the first quality will grow good Vines and Grapes, provided it is kept fertile and the Vines properly watered and tended; and the narrower the borders are in reason the more are the roots under control and the better they they can be supplied with the right kind of nutriment for absorption.

One or two instances of superior Grapes being produced by Vines in narrow borders occurs to me. Some fifteen years ago Mr. James Douglas grew excellent Grapes at Loxford Hall. I remember inspecting them with much pleasure, and have a clear recollection that the best crop of the best Muscat Grapes was produced by a Vine that had been planted in a walled-in space, perhaps a disused tank. I forget its exact nature, but remember the dimensions of the enclosure were 5 feet long, 3 feet wide, and 3 feet deep. The Vine was trained horizontally along the base of the rafters, and three rods taken up the roof. There was not a great bulk of soil it will be conceded, yet the crop of Grapes on the three rods excelled that produced by any other Vine with ten times more space for the roots. How long the confined Vine remained bearing so well I have no means of knowing, but it could doubtless have been kept in a satisfactory condition for many years. If Mr. Douglas sees these lines he will not dispute their accuracy, and he may perhaps tell us how long the Vine was profitable.

When Mr. Denning was in charge of Lord Londesborough's garden at Norbiton he grew as good Black Hamburgh and Muscat Grapes as were to be found in most gardens, and much better than in many. I remember being impressed with the narrowness of the borders, those in two of the houses, if not more, not exceeding 3 feet in width, yet the Vines reached the top of an 18 feet or 20 feet roof, producing first-class Grapes for I do not know how many years. Rich strong soil it may be supposed was provided in the narrow borders. What it may have been below I am not able to say, but this I know, I never before nor since observed so much sand on and near the surface of a Vine border. When it was moved it was found to be quite full of white roots, not fat and thick like the underground stems of couch, but small and multitudinous. It was evident that the sand, possibly by the force of resistance, caused unusual subdivision of the roots. "Vines like sand," observed the cultivator, "and do not often have enough of it." Whether they like it or not, there is this to be said about it, that something they undoubtedly do like, in the form of liquid or solid manure, can be given freely where sand abounds without souring the soil; and there is very little doubt that a liberal addition of sharp sand to Muscat Vine borders that are composed of close heavy soil would improve them considerably. In the case in question three things were so apparent that they could not be ignored—small borders, much sand, and fine Grapes.

In the Royal Horticultural Society's gardens at Chiswick the best Grapes are grown in a border that was not made with new soil after clearing the old out. That method would have been costly, and it is practically certain if it had been carried out the Vines would not have worn so well as they have and be in the satisfactory condition they now are. The natural soil was not removed, but some fresh, a thickness of 5 or 6 inches perhaps, spread on it and worked in in trenching, as if in preparation for a fine crop of vegetables. That, with surface dressings of rich manure in summer for keeping the roots in the right place, and affording support when they were the most active, and it was most needed, have enabled increasingly valuable crops of Gros Colman Grapes to be grown—not huge exhibition bunches—but just the samples that realise good prices in the market. The border is perhaps 6 or 7 feet wide. The Vines have been bearing for some years, and are this year in as good condition as they have ever been, if not better, and they would soon be much better still if they had more room for extension. They are crippled, as the garden is generally, and it must be still further starved if the managers of the Society, whoever they may be, are content to go on losing money over that precious drill hall at Westminster.—SPECTATOR.

NOTES ON GLADIOLI.

AT THE CRYSTAL PALACE.

IT has been asserted by some writers that the present season is, as far as the Gladiolus is concerned, no later than ordinary ones, but the Show at the Palace sufficiently proved how erroneous this was. Neither Messrs. Harkness & Sons of Bedale or Mr. Campbell of Gourock, both of whom generally exhibit so well there, were able to be present; indeed the latter grower wrote to me to say that he could not possibly exhibit before the Manchester Show on the 21st, while as far as my own flowers are concerned, I know that while I had the greatest difficulty in getting my eighteen, from the fact that my flowers were not one-tenth of them in bloom, my difficulty last year was to

save that number, as they were all gone out of bloom. There were but two exhibitors in the nurserymen's class, and one of these, Messrs. Kelway & Son, did not compete, although I believe their flowers had been entered for competition. Mr. Burrell had thus all the field there to himself, but he would have required a very strong exhibit indeed to have run ahead of him. There is a size and solidity about Mr. Burrell's flowers that one looks for in vain elsewhere, and shows the excellent quality of the soil in which he grows his bulbs, and also the suitableness of his climate. His stand, while comprising many named varieties of French origin, also had a number of seedlings of his own, some of which were of peculiar beauty, and quite equal to the best of the French sorts. Of these latter he had Primatrice ; Pactole, an excellent spike of this beautiful yellow variety which it is not easy to catch in such good form, as it has a tendency to open its flowers irregularly ; Flamboyant, with large scarlet flowers ; Atlas, a very long spike of light coloured flowers ; Bicolore, a very striking variety, the upper petals brilliant rosy salmon colour, and the lower petals ivory white ; Celimene, orange red, flamed with vermilion red ; Enchanteresse, a splendid new French variety, very large flesh-white flowers, and a small feather of violet (this is without doubt the finest flower of recent years, and so highly did the Judges think of it that they awarded it a first-class certificate) ; Grand Rouge, a magnificent flower of intense scarlet, very like the old flower Meyerbeer, but very much larger and earlier in flowering, being one of the early section, and Meyerbeer one of the latest ; Rossini, a fine old flower, and one of the most staying flowers that I know, dark red amaranth in colour, with white spots ; Archduchesse Marie Christine, rather a loose flower ; Mabel, a very beautiful well-formed flower, white, with brilliant carmine streaks ; Cervantes, bright rose streaked with carmine, white line on petals ; Colbert, cherry red, tinted orange ; Démosthène, bright rose flamed carmine, white stripes ; Crepuscule, a grand spike of lilac rose carmine, flushed with carmine. Besides these he had some excellent seedlings of his own, one, Snowdon, without doubt the finest white in cultivation ; in fact, there has always been a scarcity of pure white Gladioli. Madame Desportes is of such a delicate constitution that no one can keep it. Ondine is too small for present taste ; the same may be said of Norma. Shakespeare is good, but too early for September show, but Snowdon is very far in advance of any that we have ; it is very like in form, size, and substance to Enchanteresse, but is of the purest white instead of creamy white, and is unquestionably destined for a premier place amongst Gladioli growers. Then there was Nobilis, a very fine flower of excellent qualities ; Ruddigore, brilliant scarlet, very good ; Dorothy, violet, shaded with lilac ; Pleasaunce, beautiful soft rose, something like Delila, but deeper in colour.

Mr. Kelway's lot contained, comparatively speaking, but very few named varieties beyond those of his own raising. He had also several new ones which he had put up for certificates, but unfortunately he had not entered them, and so they were passed by. Amongst his flowers I noticed Mr. Baines, orange carmine, with carmine stripe on the lower petals ; Agonis, salmon pink, flaked at the edges with vermilion, creamy-yellow centre, good flower ; Mannis, orange red with violet tinge ; Lord Rothschild, scarlet crimson shaded with purple ; Mrs. Langtry, white, tinted with purple ; Rembrandt, cerise, flamed carmine ; Bacon, scarlet, dark violet centre ; Cabel, very like Mabel, perhaps it was a mistake in writing the label ; Alcon, creamy white. Many of the spikes had simply numbers to them, so that it was impossible to say what they were. There were four exhibits for amateurs only, and in only one of them, the first prize for eighteen, were the varieties named. The stand consisted of Mabel, Grand Rouge, Rossini, Marquis of Lothian, Princess Maude (Kelway), Prince Henry (Kelway) Tamerlane, Murillo, Nereide, Crépuscule, Colbert, Démosthène, Giganteus, Opale, Pasquin, Pactole, Ordine, and Adolphe Brongniart. I think the careless way in which flowers are so often staged nowadays is much to be reprehended. It must be remembered that they are exhibited for the benefit of others as well as of the exhibitor, and if they are (what I believe they are) in most cases seedlings, then I think that ought to be stated.

It will thus be seen that my contention is true, and I am very much afraid that owing to the lateness of the season a vast number of spikes will never be opened at all. Such are the vicissitudes to which we are exposed in our climate.

AT THE AQUARIUM.

Here the exhibits were fewer than at the Palace, but the prizes were peculiar also. They do not invite the amateur, for the only prize is for a collection of Gladioli spikes, no number indicated, and hence the owner of a great number has an advantage which eclipses the amateur, however good his flowers may be. It is hardly to be supposed that an amateur would venture to enter, and only one did, and was rewarded for his pluck ; but when placed with thirty-six alongside of 150, of course he has to sing very modestly his praises. He had some good flowers, but the interest centred in Mr. Burrell's splendid group. Nothing could be finer than this display. I have already commented on the size and excellent quality of his flowers, and as the season advances his flowers seem to increase in beauty. As I have already commented on some of his seedlings. I may here notice those which were exhibited here, and which seemed to me of excellent quality. Mrs. E. B. Lindsell, a fine flower of great substance, with a well developed spike, somewhat in the shape of Orphée, but larger and brighter in colour. This was awarded a first-class certificate. Cygnet, a very lovely flower, of creamy white with a yellowish spot in the centre, most chaste and beautiful. Laretta, a flower somewhat in the style of Mabel. Asphodel, another of the fine white flowers which Mr. Burrell has been successful in raising. It is somewhat in the style of Ondine, but larger. Phyllis—this is a most exquisite and novel flower, ground colour a creamy or lemon white, with a lemon-coloured spot in the centre, which shades off into the most delicate pale feathering, totally unlike any flower that I know. Amongst the named flowers Abricoté was much noticed for its clear bright apricot colour, with heavy marking or shading. One is grieved to think that even this chance of seeing some of Mr. Burrell's beauties is at an end, if, as we hear, the Aquarium is to be pulled down.—D., *Deal.*

GRAPES SCALDING.

In principle Mr. Young agrees with what I have written on this subject, but he characterises my statement as "fancy" that Black Hamburghs, and I may include all other varieties of Grapes, will scald as badly as Lady Downe's. It is no fancy on my part, but a fact that I have proved repeatedly. I showed the conditions under which scalding was almost certain to take place, and the precautions necessary were given to enable those for whom the article was written to guard against evils that might destroy their Grapes, and the main, or chief, cause be overlooked. I am justified in believing that Mr. Young "fancies" that it is next to impossible to scald the berries of Black Hamburgh and other early and midseason varieties, or that he denies what I state as a fact from an insufficiency of experience. After the bold assertion that it is "fancy" to state that Black Hamburghs will scald, he evidently has grave doubts on the subject, for he places a limit to the statement he makes. If they scald up to midsummer it is the result of bad management, and yet he takes "ordinary" precautions to ward off this evil in the case of the late Grapes under his charge. If they scalded what would it be but the result of bad management? All have not houses of modern construction with ventilators at the top that can be left open without great risk of some bunches being spoiled by rain, or that will open from end to end. Many old structures have one or more lights secured at each end, and no means of opening them. It was to structures of this nature that my remarks were mainly directed, and the precautions pointed out are absolutely necessary to prevent the berries of Black Hamburghs, Foster's Seedling, or any others being injured.

It is an easy method of procedure to leave the ventilators open at the top and base all night to guard against scalding. Such action may be tolerated when the cost of production and the value of the crops are not placed side by side. It is the reverse of economy to leave the house open and maintain the desired temperature by the aid of fire heat. Expenses of this nature are not warranted at the present price of Grapes, and if they are to pay for growing, the cost of production must be kept down, and no more fire heat used than is really necessary. I quite agree with what your correspondent says about keeping heat in the pipes.

There is one other point that I cannot allow to pass. Mr. Young says, "to prevent the berries of Lady Downe's scalding, no moisture must be allowed to settle on them." A difficult task, but this will do no harm providing it is not condensed in such quantity as to run down the berries and injure the bloom. How do those cultivators manage to keep their Grapes from scalding who employ the syringe to the foliage twice daily until the Grapes commence colouring? I do not believe in such a practice, because it is liable to injure the bloom, but nevertheless it is practised by more than one large grower for market, and yet their Grapes do not scald, nor are more liable to scald from this cause than those who strictly avoid such methods of culture. Mr. Young may "fancy" that there is a difference between moisture falling on the berries from this source and the moisture the berries naturally condense if the temperature falls too low. In dealing with the latter I can say that moisture condensed on the berries does no harm if it is gradually evaporated, as the temperature of the house rises and means of escape for it are provided.

It is easy to contradict a statement but not so easy to prove that it is wrong, and if Mr. Young "fancies" that Black Hamburghs will not scald, the obligation falls upon him to substantiate his views by proof.—
—Wm. Bardney.

When reading the interesting article on this subject by Mr. Bardney, I arrived at the same conclusion as Mr. Young—viz., that his fancy had carried him too far. But as this was so unlike Mr. Bardney's practical

writing, I concluded he would oblige us by an explanation. I now see Mr. Simpson comes forward to endorse Mr. Bardney's remarks. Perhaps it is possible to scald Black Hamburghs, but it would require gross carelessness to accomplish such a feat. This is not so with Lady Downe's. I do not remember entirely escaping scalding with this variety for the last nine years. In some seasons only a few berries were touched, but sometimes I have seen them scalded so as to spoil the appearance of the bunches. The past season we have escaped very well, but not entirely scatheless; but I have not seen an instance of Black Hamburgh scalding. I have ample proof that both varieties grown in the same house will not scald as suggested by Mr. Bardney's remarks. We have one Vine of Lady Downe's in an early house; I mean a house that ripens its crop in May. It is planted principally with Hamburghs but they never scald, while the former does so regularly, though not to a great extent; still the fact remains. Another house ripening in June has also one Vine of Lady Downe's, but I never saw a berry of Black Hamburghs scalded, while Lady Downe's scalds more or less every season.

Mr. Simpson considers Black Hamburghs grown with very little fire heat are just as liable to scald as any other Grape. This I cannot agree with, and will give a case in point. I am well acquainted with a range of vineries that used to be managed as succession houses, the first crops ripening in May and the last in September. Two were planted mainly with Black Hamburghs, one with Museats, and the other with Lady Downe's and Black Alicante principally. This garden having changed hands through death in the family, and the present owner having little or no taste for gardening will scarcely allow any fuel for the heating of this range, so the Grapes are now grown almost without heat, none being used till the crops were nearly finished off, so I think I can fairly claim to have a case where little fire heat is used. The four houses all started naturally, and have all finished excellent crops of medium sized bunches. The Museats are not very well coloured perhaps, but this is the case where fire heat has been employed. Not a Black Hamburgh berry has scalded, but I see the Lady Downe's have scalded in several parts of the house. Now, this range has been treated exactly alike, and I think it proves conclusively that there is no comparison between the two varieties as regards scalding. I was very pleased to read Mr. Young's ideas on "fixed temperatures." This is one of the old gardening fads that are not yet obsolete. I am quite convinced Grapes can be and are grown as perfect by Mr. Young's method as by the fixed temperatures insisted upon by some head gardeners. If the truth could be arrived at, these "fixed temperatures" are the cause of far more evils than can fairly be attributed to a rise or fall of a few degrees.—JAMES B. RIDING.

NEW DAHLIAS.

A LARGE number of seedlings were staged at the Crystal Palace Show, especially of the Decorative or Cactus, Pompon, and single types. The seedling show varieties appeared to lack development, as if more time were required to manifest their characters. But one first-class certificate was awarded in the Show section, that for a charming and distinct Fancy named Matthew Campbell, exhibited by Messrs. Keynes, Williams & Co. of Salisbury, the ground colour bright buff shaded with apricot and striped with crimson; fine petal and outline; an excellent addition to the Fancy varieties. A Show variety named William Jackson, shaded crimson, with bright purple edge, appeared too much like other varieties in cultivation. Of new Show varieties, Mr. C. Turner had Glowworm, bright scarlet, and somewhat reflexed, like W. H. Williams; Mary Anderson, very like Mr. Gladstone; and Corsair, buff shaded with gold, the reverse pale purple. Mr. G. Harris, of Orpington, had a few also, but not sufficiently developed to judge of their worth.

Of new Pompon varieties some charming flowers were staged. Messrs. Keynes, Williams & Co., received certificates for the following flowers—Little Ethel, white, slightly tipped with dark purple, good petal and outline, medium sized, very distinct and pretty; Fairy Tales, delicate primrose, fine petal and shape, very soft and pleasing; Whisper, bright yellow deepening to gold at the base, shell-like petals, and perfect outline; and Eden, deep bright shaded crimson, a small, compact, and admirably formed flower. Others of this type from the same firm were—Little Darkie, bright maroon, small, good shape; Red Indian, deep bright red, excellent petal and shape; and Eurydice, blush, tipped with purple, very pleasing. The same award was made to Mr. J. T. West for Pompon Dolly Keith, white, the centre yellow tipped with white; a flower likely to appear in variable character, but a very pleasing addition to the class. Mr. C. Turner had a first-class certificate for Pompon Rubens, maroon crimson shaded with bright crimson; a small and attractive flower of decided merit; Innocence, in the way of Keynes' Little Ethel, and very similar to it; Admiration, and Juliette, yellow tipped with orange-red, also came from Slough.

Of the Decorative class Messrs. Keynes & Co. received a first-class certificate for Panthea, a very bright pale reddish cerise flower of the Juarezi type. They also had Amphion, yellow flushed with cerise, fine and distinct; and Honoria, pale bright yellow. The same award was made to Mr. J. T. West for Beauty of Brentwood, pale shaded purple, with bright pale purple on the edge; a purple Juarezi. Mr. T. S. Ware had William Rayner, yellow, shaded with cerise and tinted with purple; Sydney Hollings, maroon shaded with purple; and Professor Baldwin, a pale orange scarlet Juarezi. Messrs. H. Cannell & Sons had several new varieties. A first-class certificate was awarded to Yellow Juarezi, pale primrose yellow, good and distinct; Lilian Abery, yellow, with margins of white, distinct, but staged in poor character; Sir Trevor Lawrence and Lady Ardilaun were also shown.

New single Dahlias were numerous, and in not a few cases they were simply counterparts of others in cultivation. Mr. T. S. Ware received first-class certificates for R. C. Harvey, yellow, shaded with salmon, and with a red ring round the eye, distinct and of fine form; Florrie Fisher, white ring round the eye and edged with purplish mauve, fine form; and Mr. Ramsbottom, pale shaded cerise, very distinct and pleasing. Kate, orange-maroon, is a bright and attractive flower. Mr. T. W. Girdlestone received first class certificates of merit for The Mikado, having a yellow ring round the eye, then a broad zone of deep scarlet, edged with primrose, distinct and fine, and Daisy, white, broadly edged with mottled rosy pink, pretty and distinct. Messrs. J. Cheal & Son had the same award for Queen Victoria, the florets white with side margins of crimson, and Duchess of Albany, silvery white, pink, and orange-brown, a Fancy Dahlia among the singles, very distinct. The same award was made to Mr. Henry Glasscock for Gertrude, a charming variety having a yellow ring round the eye, then a zone of white and a broad edging of pale rosy purple, shading to silvery white on the margin.—FLORIST.

PEAR-SHAPED APPLES.

ONE of the most curious examples of changes in fruit that has come under our notice is represented in the engraving, fig. 28. It will be seen what appears to be a Pear and an Apple growing from the same stem, or one blossom producing a round and another a Pear-shaped,



FIG. 28.—TWINS.

fruit. The twins are figured with exactitude. Both fruits are Apples alike in colour, texture, and flavour, and several others of the same nature have been produced by the same tree, some of which are before us. The specimens were sent to us by Mr. Spencer King, publisher of the *Suffolk Chronicle*, and were gathered from a seedling tree in the garden of Mr. S. Gower, Fitzroy Street, Ipswich.

Mr. King, in writing to us on the subject, observes:—"The tree bore Apples last year for the first time, but no twin fruits were noticed. They might have been there, but not observed. The tree is a seedling, but what of or how sown nobody knows. There is no other tree of any kind on the ground. Mr. Robert Garrod, a well known fruit grower, and brother-in-law of the raiser of the tree, says that there were this year certainly a score of these twins, as well as many other bunches of round Apples, and that the specimens I sent you were a fair sample as to size. If he can procure a larger specimen of the round kind he will, and I will send it on to you." We were subsequently favoured with other specimens, both round and Pear-shaped, with the following supplementary note:—"I send another, larger, specimen of the seedling Apple. The Pear-shaped ones did not only grow like the specimen I first sent you, but also singly and in couples. In fact, the two kinds

grew 'just anyhow.' The owner fearing to lose the crop gathered them early, and they do not appear to have attained full size."

The fruits have unfortunately been gathered too soon, and have shrivelled in consequence without the flavour being developed. It is evidently an early dessert Apple. Mr. Garrod considers it resembles the "Margeton," some fair specimens of which we shall be glad to see with the object of determining their identity; in the meantime we advise the owner to take care of his sportive seedling, protect the blossoms from frost next spring if necessary, and we shall be glad to know of the nature of the succeeding crop of fruit.



THE MANETTI STOCK.

How strange Mr. Murphy's praise of the Manetti as a stock reads on page 251 of the Journal. Personally, I long since came to the conclusion that except for manufacturing yearly Rose plants upon—particularly for late budding—the Manetti is worse than useless, for if most Roses cannot live without it they will not live with it in many soils, and I even think some good Roses have gone out of cultivation chiefly through it; Olivier Delhomme, for instance, and Marie Baumann hate it.—S. S.

SPORTS.

"Y. B. A. Z." gives some information as to his experience of Merveille de Lyon sporting. It is not at all unusual where a number of this Rose is grown, as is the case here, to see pink flowers growing on plants here and there. More than this, I have seen several times Rose blooms one half white and one half pink. I should say that these blooms are generally a little imperfect. Last summer being very dry, I noticed a great number of the blooms were pink, but I think in all cases the blooms this season have returned to the proper colour—viz., white. My general experience of Merveille de Lyon is, that it is very similar to Lady Mary Fitzwilliam and the new Lady Alice this far, that where we plant twenty-four Merveille de Lyons we shall probably get one or two Baroness Rothschilds, and where we plant a dozen Lady Marys half of them will be Lady Alices early in the season, and the other half will be ditto later on.—D. GILMOUR, JUN.

MANETTIS AT NEWTOWNWARDS.

Mr. Murphy mentions my name in connection with his article on page 251, and seems to be labouring under the impression that if Roses do well on the Manetti the first year, or from the bud in a genial climate, that the Manetti must be the proper stock to grow Roses on. It is notorious that Manetti Roses will make a grand growth and bloom well the first year with the nurseryman. Poor consolation to the buyer, who finds them fail when he gets them. It is notorious, too, that after the first year the growth and the blooms together grow "small by degrees and beautifully less," "until death closes the painful scene." I could go on pitching into the Manetti over several sheets, but I fear the editorial pen might strike some of it out. I will, therefore, content myself with two facts and a prophecy. Fact one—Nearly all the leading amateur prizetakers are dead against Mr. Murphy's stock. Fact two—My experience of the Manetti extends over many years and over many thousands of plants. The Yankees say "Never prophesy unless you know," but in spite of this I believe and prophesy that twenty years from now the Manetti will not be known in the leading nurseries.—D. G.

ROSES IN WINTER.

(*Continued from page 243.*)

I LIKE Roses on their own roots, but should not think of thus working up a stock of Niphetos for planting. Without doubt it will do better on the seedling Briar and grow with greater luxuriance. Those worked close upon the root are preferred, so planting or potting is impossible without burying the union; deep planting is then avoided, and the consequences that might follow such a practice.

If I grant, for the sake of argument, that plants either on their own roots or suitable stocks become exhausted when planted out earlier than those grown in pots, then I should advise the former system of culture in preference to the latter. I do so because in the end it would be the most economical, and the greater quantity of blooms and their superior quality would more than compensate for recruiting, or even the renewal of the plants and borders. If I were to attempt, which is not necessary, to draw a comparison of the cost of production in each case, the balance would undoubtedly be in favour of planting out. If the strain of forcing plants in pots and the treatment necessary to keep them as healthy as possible did not enfeeble their growth, why do so many growers have two batches and plant them outside alternately? Without entering into details, such practice points unmistakeably to the conclusion that has already been arrived at.

If we glance at a batch of plants under pot culture, is the treatment they must annually receive calculated to keep them in luxuriant health? When they are placed into large pots and established in them, how long would they remain in a satisfactory condition at their roots if the soil was not partially renewed annually? Let the plants alone at their roots, and the soil in a very limited period will not encourage robust growth, without which blooms of the first quality and in such quantity as to render them remunerative cannot be produced. Repot them annually, and healthy strong growth will certainly be insured provided other necessary treatment is right, but it cannot be accomplished satisfactorily without mutilating the roots to a serious extent. As far as I can judge, the treatment that must be accorded to plants in pots is of such a nature as to bring them into an exhausted condition in a third the time that would be the case with those planted out.

I have proved that Roses planted out will last for at least a dozen years without the renewal of the plants and borders. The evil to be avoided is overfeeding, and more plants fail from this than any other cause. Strong doses of liquid soon poison the border, and the renewal of it and the plants is a certainty within a very limited time.

If exhausted plants are to be recruited, they should not be allowed to decline too far before they are operated upon. If they are neglected until they reach the last stages of their existence, then the rubbish heap is the best place for them, restarting with young plants. With those planted out, when the border needs trenching up and partially or wholly renewing, as the case may be, perhaps the best course is to have strong plants in 9 or 10-inch pots ready to take their place, so that no serious break in the supply of blooms will occur. But the old plants can be restored to health. These should be lifted in June after they have made a fair quantity of firm wood and show signs of resting. As many fibres as possible should be preserved, and the plants potted quickly. If they can be placed in a shady position outside, and well syringed two or three times a day to keep their foliage fresh, they will soon commence root activity. When this takes place they will not be long before they start into growth, by which means they quickly become established. The border in the meantime should be renewed and the plants placed in it again by planting them without breaking the balls. They will continue making weak growth, and must be thoroughly rested during the winter. They must be pruned hard back in January, and if allowed to start slowly it is surprising what strength they will attain within a year from the time they were lifted. To recruit plants in pots that have been forced early, the balls should be reduced to at least two-thirds by carefully working out the old soil from amongst the roots. They should be placed in smaller pots, and afterwards shifted as required. After reducing the balls and repotting, the plants should be plunged in a shady place at first. During the winter prune them closely, leaving only a few inches of the old stems above the soil, and if allowed to come forward in a cold house or frame they will push shoots of the most vigorous description. If the old stumps were not visible at the base, they would within a year have the appearance of robust young plants.—WM. BARDNEY.

PLANTING AND TRANSPLANTING

STRAWBERRIES.

ALTHOUGH Strawberries are easily grown, they are very often carelessly cultivated, this entailing a waste of labour as well as of land, and resulting in poor crops and deficient fruit. Some varieties will endure more ill and careless treatment than others, but all are more or less impaired by improper treatment. Many growers of Strawberries make no provision whatever to protect and select the runners, nor even to treat those they obtain with the care that is necessary for producing fine plants and fruit. A very usual custom, even in some otherwise well-regulated gardens, also in market gardens, is to gather the fruit and tread down the runners, at the same time spoiling most of them, and apparently caring for none. When the runners are lifted the work is often done roughly, the young plants thrown into a basket, then often allowed to stand in the sun for a considerable time drying the roots. This check at the outset is fatal to the production of a satisfactory crop of fruit. Sometimes basketfuls of runners are placed in a shed for several days, and more mischief is done in dressing them by cutting off many leaves. No good leaf should be removed from a Strawberry plant. After all this manipulation and mutilation, the plants are either laid in rows as thickly as they can be packed, or planted permanently with a common dibber, the roots in both cases being pressed tightly together. This entirely prevents free growth, and substantial fruitful plants cannot result from the process. A plantation of Strawberries thus carelessly made never yields a fair or even half a crop.

Strawberry beds are too often allowed to become a mass of runners and weeds, and to remain so until the autumn, if not till the following spring. The labour in cleaning the plantation is then considerable, and the ground is filled with seeds for raising more weeds to choke the Strawberry plants. All this is preventible by the timely application of a hoe, and at less than a twentieth part of the expense incurred through dilatory action, while a gain of 100 per cent. follows correct treatment. Weeds in the soil and

weed-growers are great stimulants towards depression. The foregoing is not an overdrawn picture, but has been witnessed in many places; it is, indeed, the rule rather than the exception in some districts, both in private and market gardens, and is ruinous. Let anyone try an experiment between the foregoing and the following plan, and I am certain that he will never revert to the slovenly method again.

Strawberry plants carefully selected from specially prepared plants, and planted with their roots fresh, and placed in the ground in their natural position in well-prepared land after a winter crop, or even after an early summer crop, such as early Peas or Potatoes at the end of July or early in August, make more headway than plants inserted in spring or the autumn previous, and are often far larger by May and June following, and bear a much greater crop of superior fruit than can be had from old, exhausted, weed-choked plantations—indeed thrice the value of fruit can be had by this plan from a given plot of land, and with a far less exhausted soil and freer from weeds, with a tithe of the labour the other system entails.—W. T.

NOTES ON GLOXINIAS.

THESE invaluable summer flowering plants appear to revel in a sunless season, judging from the numerous well grown plants that have been seen at recent exhibitions. In this neighbourhood there are several gardens in which Gloxinias are well grown, and the prizes offered at the late Frome Show brought together a highly meritorious collection, the plants being most vigorous and healthy, and furnished with blooms remarkable for size and variety. The best lot of these plants I have inspected are those in possession of E. R. Trotman, Esq., Frome, and they are highly creditable to his gardener, Mr. Bridgeman. The plants are now flowering for the third time, and were obtained from seed supplied by Messrs. Cannell. They are grown in a large lofty vinery, and are not subject to much heat at any time. They occupy a position round the front on a slate staging, and from the high elevation of the roof abundance of light is provided. On inquiry as to the treatment they received in the manner of feeding and soil, I was told various artificials have been adopted, but diluted stable drainings appeared the most stimulating. Sulphate of ammonia is used by some, and it has been experimented with here, but was found to injuriously affect the leaves, causing them to assume a rusty appearance. The soil was composed of peat, loam, and sand in equal parts; but it may be well to mention the fact of the loam being of so light a character and of very good quality, leaf mould, which is of considerable importance generally, is dispensed with. They occupy pots 7 inches in diameter, and forty blooms on a plant are sometimes expanded at one time, and on many plants thirty flowers could be counted at the time I saw them. The strain is a good one, the colours being varied and the blooms remarkably large. To maintain a good number of the very best a packet of seed is sown each season. When the plants attain a flowering size the best are selected and inferior ones thrown away, an excellent plan when high quality is desired. Good strains of Gloxinias may be obtained now from most seedsmen, who cannot long afford to keep inferior stocks. February and June are very good dates for sowing; the seeds and plants from either, when carefully attended to, can be flowered the same season.—W. S., *Frome*.

NOTES FROM A HERTS GARDEN—REFLECTIONS.

SOIL a stiff loam, subsoil clay. Formation peculiar, baffling description; suffice that in this particular spot chalk exists at 80 feet beneath the surface, which can but remotely affect the present vegetation. The original soil, as seen in adjoining land under permanent pasture, is 12 to 15 inches in depth of workable material with a clay subsoil more or less stony and impervious to water. Out of such land an area of about 4 acres had some time been selected as the site of a kitchen garden. Its exposure is south, inclining somewhat sharply in that direction, and less so westward. North the ground rises to a height of about 65 feet, clothed in park-like order with majestic Oaks. The highest point of the ridge is 396 feet above sea level, consequently the part used as a kitchen garden has an elevation of about 330 feet at the upper part, and 300 at the bottom. About 2½ acres are enclosed by walls 10 feet above ground, but the south and north walls are double the length of the others. The sun is at right angles with the north and south walls at about eleven o'clock, therefore passes the assumed meridian at eleven o'clock instead of twelve o'clock. Some forty years ago the garden was drained, and the drains are still thoroughly efficient. Some of the clay was burnt to hard particles, and these form a layer mixed with clayey stuff about 6 inches thick over the undisturbed subsoil. The least burnt or crumbly portion was mixed with the top 18 inches of the soil. Chalk has been applied to portions, probably the Strawberry quarters, and ashes to other parts, to improve the working of the soil. Lime does not appear to have been used, but it is present in the soil through occasional dressings of gas lime as obnoxious or destructive of slugs. Altogether there is a depth of 2 feet to 2 feet 6 inches of strong loam which does not appear to have been stirred deeper than a foot within a generation.

Outside the walls are the customary slips, and there are walks of 7 feet 6 inches in width, both inside and outside, so as to admit of a horse and cart for manuring, &c., and a liquid manure cart also when deemed expedient. The inside is divided into four quarters by cross walks equally wide, and along their sides are borders planted with fruit trees of various kinds, both on dwarfing and on free stocks, remnants in most instances of renovation, though some have collapsed and been replaced. The walls, I may further premise, are utilised for fruit-growing, both under glass structures heated and unheated, and exposed, of some or all of which I shall have, from time to time, some observation to make or experience to record; and the first is that the land generally in the locality is, as evidenced by the herbage and the cattle that browse thereon, and as described by Mr. W. F. Emptage at the recent Fruit Conference at St. Albans, "some of the finest land in the whole world." It grows by the aid of London "muck" in a dry season one and a half to two loads of prime hay per acre, and in a wet season two to two and a half loads per acre (1887 and 1888 being representative of a dry and wet season respectively). I shall now remark that, considering the present marketable value of beef, mutton, and hay through proximity to the metropolis, their production is the best possible use to which such land can be put in the present state of agriculture. To convert land suitable for permanent pasture or meadow (supplying the home markets directly with the primest hay, beef, and mutton at remunerative prices and upholding of the national prestige) into vegetable and fruit gardens is a misapplication of natural resources. Is it not absurd to seek to apportion all the best of pasture and meadow land into allotments and fruit farms? Surely there are gardens enough to meet every demand, so far as our climate admits, by the home grower of fruit and vegetables if cultivated up to their capability of production. What of the orchards that present a spectacle of stunted, weather beaten, cankered moss and lichen-covered specimens, lovely in blossom and picturesque, with crab-like fruit in autumn, a picture none but an artist would call sublime?

An orchard of suitable trees, certain of cropping and of bringing remunerative prices in the market, would be the means of helping the farmer in a season like the present, only it seems nobody this year has a paying crop of any description of fruit; either the trees are fruitless or spoiled by the wet. That is just where the "rub" comes in. The crops of fruit in this country are not certain on account of spring frosts, blight, or drought; or if they hold on despite of wind and weather something is sure to happen to prevent the cultivator realising anything like the profits paraded before the world. But when failure comes we are told "We have been practising on wrong lines—planting standards on grass when we ought to have planted half-standards and cultivated the ground between." But when this plan fails we were wrong again, and "ought to have gone in for bushes, pyramids, espaliers or cordons," and instead of growing many have been content with few sorts suited to the locality, certain croppers, and excelling imported produce. Just the things are those everybody wants to get hold of—something that can be grown profitably. Fruit Conferences tell of want of fruit and vegetable supplies; the thing that puzzles all is finding the goose that has ceased laying the golden eggs. At the St. Albans Fruit Conference I notice by the newspapers that Mr. Emptage characterises trenching as damning fruit culture in that district, and at the Crystal Palace Conference Mr. Bunyard looks upon deep cultivation as the salvation of the fruit industry. Which is right? Could not the Royal Horticultural Society solve the problem? Why not devote an acre, or 5 acres for that matter, to the cultivation of fruit for profit, an account being kept of the first and after cost, and have it free of access to all? It would only serve its purpose for a particular locality. Then why not have fruit gardens in different parts of the country in connection with the parent Society as a guarantee of management and result? Experimental gardens could not fail to give a great incentive to fruit culture.

The influence of an exhibition of an acre of fruit trees on the old lines—*i.e.*, orchard—another on the cultivated system as standards or half-standards, with under and between crops, and an acre of bush, pyramid, espalier, or cordon trees, would practically demonstrate the systems, and do more to guide others than all the conferences that ever took or will take place. What is wanted is not talk but practice. Definite information in respect of the capabilities of the soil, the most desirable crops to grow, and the most approved method of cultivation, something tangible whereby to arrive at a solution of the problem, which puzzles everybody just now (and ever did by what I can gleam of man since Adam), what to put in the market that will return a fair per-centage on the capital invested, industry employed, and enterprise

with energy displayed. Conferences only mystify would-be cultivators. Well may the public look askance at savants not agreed, and when doctors differ who will step into the breach? Here is a chance for the Royal Horticultural Society to regain its prestige and earn the everlasting gratitude of the country.

I have been led into this discussion by reading the reports of the Fruit Conference in the newspapers. To find a statesman cudgelling farmers and labourers—born tillers of the soil—into seeing something in fruit and vegetable growing that will assist them to stem the current of depression is most suggestive—of what? Well, what you like. I know it is only by the efforts of individuals that good can come, and so far as I can see it never came but in one way—viz., in cultivating the soil so as to produce a maximum of useful products with as little outlay as is practicable.—UTILITARIAN.



SEASONABLE NOTES.

DISBUDDING.

CULTIVATORS of plants for the production of large blooms will now be busy "taking" the buds as fast as they form. This phase of the culture of Chrysanthemums for the purpose named is perhaps the most important of the details required in producing the best results. No person can go far wrong if he retains all the flower buds now showing, removing the growth shoots as soon as they can be handled, because to allow the growths to extend, taking out the bud instead, then waiting for the last bud which will form at the extreme point of the shoot, would not result in success, if I except perhaps one or two cases of incurved varieties—notably the Queen family in the extreme south of England. To have good blooms of the Japanese varieties the buds as showing now must be retained. The best time of the day to remove the growths is early in the morning, when the dew is on the leaves and shoots, rendering the growth more succulent and easier to take off than it is in the middle of the day, when the leaves are dry and the shoots soft, as they are with the sun shining. There is a danger at that time to injure the flower buds. The best way to proceed is to hold the stem near the top securely in the left hand, and with the right give the lateral shoots which spring from just below the bud a sharp bend in a downward direction, when they easily snap off. If a suspicion exists that the bud has been damaged one growth should be allowed to remain near the point of the branch for a few days, as the bud, if at all disfigured, cannot possibly develope into a perfect bloom. If it is thought best to remove the bud and allow the shoot to grow it will produce a bloom even if a small one. By the removal of all lateral growths at each node which burst out during the temporary check given to the plant by the formation of a flower bud the whole energy of the plant is concentrated to the flower bud at the point of each branch. Three blooms to each plant is the orthodox number allowed. Much better it is to have this number of good quality than to attempt more and have them small. When the exhibition table is reached this will be found to be good advice.

SECURING THE BRANCHES.

The branches as they extend should be securely tied to their supports. Neglect of this detail at this season is often attended with serious results, such as the breaking of the shoots just below the buds, which are at that particular point very soft, and in most varieties they are liable to bend; added to this the weight of water lodging among the leaves during showery weather often cause the points to snap off. Birds seem to be very fond of alighting on these points, which if at all bent by their own weight are almost sure then to break. The shoots grow so fast at this stage that almost daily attention is necessary to keep the ligatures in proper order. If the stakes are rough through the bark being upon them or knotty the ties do not slip up as growth proceeds, consequently the shoots buckle and in time snap off. This often happens with the good or scarce varieties. Generally the plants this year are not so tall as in some past seasons, owing possibly to the sunless cold spring. The plants in consequence did not make that free growth from the time they were rooted as is their wont under more favourable weather.

WOOD RIPENING.

The wet sunless summer has been all against ripening the wood as growth progressed. This must have been much felt by those persons residing in the northern counties of England or in low-lying flat districts. Those on breezy hills are certainly favoured this year in this respect. I should not be surprised to see many large loose blooms this season from unripened plants. Soft sappy stems cannot produce flowers of the same depth and firmness as plants do which are grown throughout the season under more favourable conditions. The stems require solidifying as growth proceeds. No artificial treatment can make up for an insufficiency of solar rays. Particularly is this felt in the incurved section. To make the most of favourable weather the branches should be trained as thinly as possible for gaining the desired end—properly ripened wood.

WATERING AND STIMULANTS.

Watering the plants has been an anxious operation this season. During such showery weather as that experienced, applying water to the roots when required has been difficult to perform. For days together the plants received more rain than was good for them, causing in some instances a loss of the lower foliage. After a spell of wet weather it is wise to allow the plants to approach dryness somewhat before applying water to the roots as a counteraction to the soddened state of the soil in the pots. Care should be exercised in the use of stimulants in such weather as has prevailed for fear of rendering the branches gross in character. Until the buds are freely swelling it will not be wise to give the plants much aid beyond a little soot water for keeping the foliage of a good colour. After the buds are freely swelling stimulants may be given, varying the kind as often as circumstances will allow. Liquid manure made from sheep or cow manure is efficacious. The soakage from the manure heap, too, is good. The various kinds of artificial manures recommended are no doubt all good if the directions accompanying each are faithfully carried out, but where such is not the case it is useless to blame the manures.

INSECT ENEMIES.

Insect pests are numerous this season. The palm in this direction must be given to the earwigs. I never saw them so numerous, it not being an uncommon occurrence to find thirty and forty inside of a 2½-inch pot containing a small portion of moss, this being a good trap for them. Stems of Broad Beans cut into lengths and placed among the leaves are also useful. The chief damage earwigs do to the plants is injuring the buds while in a young state; if these are disfigured then it is useless to expect perfect blooms, as any injury done to the young bud is certain to develope later on. Caterpillars upon the leaves are also troublesome this season. Nothing but searching at night and handpicking will clear the plants of these.

MILDEW.

Mildew is now very conspicuous on the leaves of some varieties. Frequent dustings with sulphur—that of a brown colour is best—on the affected parts will keep this in check if taken in time, otherwise more severe measures must be had resort to, such as syringing the plants thoroughly with a liquid peparation made in the following manner:—Place 2 lbs. of sulphur and 2 lbs. of lime, which has not been slaked, in ten quarts of water, and boil for twenty minutes. For syringing on the plants use two wineglassfuls of the mixture to four gallons of clean cold water. A thorough drenching of the foliage should be given, using the jet, which causes a single stream to be poured on the plants. By placing the forefinger of the left hand over the orifice the liquid can be directed at will during the operation.

DECORATIVE PLANTS.

Bush plants of single, Pompon, and Anemone Pompon varieties grown for the use of the conservatory to flower in masses will need strict attention now for keeping their foliage in good condition, this very much enhancing their appearance as decorative plants. It often happens that these plants are grown in small pots for the sake of convenience as to space. Capital objects may be had in 7-inch and 8-inch pots if the necessary attention be given the plants. The principal part to be considered is timely attention in applying water to the roots. Alternate applications of liquid manure may be given to the plants now. If larger blooms be wished for, only the buds now forming at the points of the branches should be retained, removing the others. A few points on each plant will suffice to secure larger blooms of these sections, while the remaining branches may be allowed to flower profusely. Sœur Melanie is one of the best sorts to grow for a profusion of pure white flowers. As an edging to a group in the conservatory or elsewhere this variety is capital, as it generally carries more foliage than most sorts.—E. MOLYNEUX.

THE ROMANCE OF SEED-SOWING.

(*Concluded from page 217.*)

BESIDES these four methods of dispersion, previously referred to, there is one other occurring in a few cases and deserving of notice. I refer to movements of the plant itself—*i.e.*, of some portion of it.

Dandelion, after lying horizontally among the grass while ripening its seed, rises to an erect posture, thus enabling the wind to act on the parachute-like pappus surmounting the fruit. On the other hand, many plants by their movements provide not for dispersion of seeds by wind, but for burial of them in the soil. The small white Subterranean Clover (Trifolium subterraneum) of our commons and downs is a good example. Here, instead of the large number of florets seen in a head of purple Clover and others, only about three of the bunch become well-developed florets with pods; the rest remain abortive in a sense—*i.e.*, they are developed into a number of short fibres, each having four or five divisions like the fingers of a hand, but of course very minute.

These palmate fibres together form a small green knob in the centre of the flower head. The whole plant lies close to the ground, except that at blossoming time the three florets stand erect to secure fertilisation by the bees. This accomplished the stem lengthens and turns

downwards, the palmate fibres are developed, and, being central, on touching the earth they bury themselves with a screwing sort of movement, thus working a hole into which the three pods, which have by this time bent downwards, are drawn and effectually buried. Thus the plant safely stores away its pods full of seeds, which ripen underground during autumn and grow up in spring. The plant, growing only on ground quite closely cropped by animals, in this way secures reproduction by burying the pods safely out of harm's way. It sacrifices some of its flowers in order to make natural gimlets, which dig a grave for the three seed-bearing ones!

Many other plants, possessing the usual aërial pods, have also subterranean ones, usually shorter and with fewer seeds, the smaller number being an advantage, as they the more easily flourish when trying to germinate close to one another, while in the aërial pods a larger number of seeds evidently secures a better chance in the scattering process. Of these plants we find examples in some species of Vetch, Vetchling, and Cress. In American Earth Nut (Arachis hypogea), the "nut" so called—in reality a pod—is buried while still unripe, and later on underground developes its two seeds. If the burial for any reason be not made, the pod withers and no seeds are produced.

Some cases exist in which movement of the seed itself, after it has left its capsule, either scatters or buries it. The seed of Wood Sorrel (Oxalis) ruptures its testa or coat, expelling the body of the seed with violence. The Stork's-bills, belonging to the Geranium order, possess seeds which develope a hairy, twisted "awn," which, under given conditions, principally of moisture, unrolls and pushes the seed down into the ground, the awn itself being kept fixed by surrounding herbage. Stipa pennata, a pretty European Grass, has seeds with a corkscrew rod and long feather springing from their apex; the whole arrangement is over a foot long, and in moist weather the unrolling of the rod acts as in the Stork's-bill seeds, the feather probably serving the purpose of carrying the seed first of all to its resting place. The elaters, contractile filaments forming part of the spores of the Horsetails, act in somewhat similar manner by fixing the spores to the earth, and in some water weeds the spores are furnished with vibratile cilia or fine hairs, enabling them to move in the water spontaneously, and so disseminate themselves.

We have now seen the various agents and contrivances by which weeds are placed in favourable situations for growth, and we cannot fail to be struck with the wonderful adaptation and ingenuity of many of them. That the wings, or the hooks, as the case may be, are not mere accidents or ornaments, as some would have us imagine, but exist for the purposes named, is, I think, fairly established by looking at the kinds of plants on which they are found, and considering their stature. Sir John Lubbock, in a most interesting paper in the "Fortnightly" for April, 1881, gives us the two following statements (I quote them in outline only):—

I.—"Roughly speaking, there are some thirty genera, belonging to twenty-one different orders, having seeds or fruits with wings. They are all trees or climbing shrubs, not one is a low herb. That is, they all occur in situations where the wind has free acccess to them. If the wings were merely accidental, why do we not find them on low-growing shrubs and plants?"

II.—"There are about thirty English species where dispersion is effected by hooks, causing the fruits or seeds to adhere to the coats of animals. If these hooks were simply ornamental, or present by accident, why do we never see one such hooked fruit on a water plant or a tall tree? What is the actual fact? Out of these thirty not one is aquatic, not one is over 4 feet high, not one grows at a level below that at which seeds would be likely to get entangled in the fur of animals having reference to the usual size of British Mammals."

Thus approached, the "keys" of Ash and Sycamore circling through the air, the silvery down of Thistle and Dandelion, the rich deep crimsons and purples of our woodland fruits all have meanings for us; we behold in all of them additional evidences of the great truth of natural selection, by means of which, through countless ages, the Great Designer has slowly and certainly evolved the myriad forms and colours of fruits and seeds that call for study and attention; and we look with wonder and delight on them all, as, with perfect adaptation of construction to purpose, fruit and seed are sent forth far and wide on their beautiful mission of regeneration and abounding life.—H. W. S. WORSLEY BENISON, F.L.S. (in *the Journal of Microscopy*).

GOOD PEACHES AND NECTARINES FOR WALLS.

THERE are several of the late big Peaches of excellent quality when grown under glass, but without some assistance to bring them to maturity I consider it quite useless attempting to grow them. It is very true in favourable seasons a healthy tree, if growing in a good position, may ripen its fruit fairly, and the grower thus have an opportunity of placing on the table a passable dish of Peaches late in the season. But this is, according to my experience, a very rare occurrence. The fruit generally becomes woolly, bitter, and decays at the stone. I have tried to assist their ripening on several occasions by gathering the fruits and placing them in heat, but have never succeeded satisfactorily, and they after all have been only fit for making tarts of. Mr. Gladstone, Lady Palmerston, Walburton Admirable, Princess of Wales, and Salwey are some which never ripen well here, and we intend to replace them with some others that ripen somewhat earlier in the season. Our best, both as regards cropping regularly and quality, are Alexandra Noblesse, Old Noblesse, Bellegarde, Stirling Castle, Grosse Mignonne Crimson Galande, Barrington, Early York, and Hale's Early; and all of these with the exception of Crimson Galande I know are excellent for forcing. It may be said I have left out the best of all Peaches, viz., Royal George. For indoors we have none to surpass it for cropping and quality, while outside it has so terribly suffered from mildew with us, that I doubt whether or not it should be included in an outside collection. A Bec, Condor, Dymond, and Belle Bauce I have added to my list, and I fully expect in the first three to have something good. Dymond is now bearing a few fruits, and I like its appearance immensely. For very early use either Waterloo or Alexander should have a place, both of which ripen fully three weeks before Hale's Early but the latter I prefer for quality.

With regard to Nectarines, Lord Napier is the first to ripen, and give great satisfaction for size, quality, and cropping. Humboldt seldom fails annually cropping heavily, and is grand for colour and flavour, in fact I consider it one of the best if not the best Nectarine grown. Elruge is a certain cropper both in and out doors, and is well known as one of the best, while Pineapple and Pitmaston Orange are all that could possibly be desired. Albert Victor and Victoria do not ripen satisfactorily here, and the fruit splits when quite green and hard.—H. MARKHAM *Mereworth Castle, Maidstone.*

Notes & Gleanings

CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—We understand that the members of this Association have decided to hold a soirée at the Vestry Hall, Chiswick, on October 17th, the proceeds from which are to be devoted to the Gardeners' Orphan Fund, and is hoped that the efforts of the Committee will meet with the support of the gardening community in Chiswick and the surrounding districts. Tickets for the soirée, 1s. each, may be obtained on application to the Secretary of the Association, Mr. J. Barry.

—— FLEMISH BEAUTY PEAR.—Mr. J. Hunter sends us a fruit of this variety grown under glass at Lambton Castle. It is 11½ inches in circumference and 4 inches long exclusive of the stalk; the skin is transparent and glossy, streaked and flushed with red, the specimen as combining size with colour being one of the most handsome we have seen.

—— A LARGE bed of Madame Desgrange Chrysanthemum is one of the features of HAMPTON COURT GARDENS in October. This year the plants are a little irregular, and several of them appear to be producing growths differing from the original, but flowers on these are not expanded. A bed of G. Wermig is a sheet of soft yellow, this sport invariably flowering earlier than its white prototype. Mrs. H. Hawkins, the new golden sport from G Wermig, is an acquisition of the season, and likely to be extensively grown in pots and borders.

—— WE have received the schedule of the LEDBURY AUTUMN FRUIT SHOW, which is to be held on October 25th. Prizes are offered for collections of dessert and culinary Apples, also for single dishes of approved specified varieties of Apples and Pears, with a guinea prize for the heaviest Apple. Cider and perry fruits are also provided for, and there are two classes each for Grapes and Tomatoes. The competition, we presume, is open to all, though this does not appear to be stated in the schedule. Mr. Jesse Garwood, Ledbury, is the Honorary Secretary.

—— APPLE GRAND SULTAN.—A few trees of this variety will be found useful where early dessert Apples are in demand. Worked on the Paradise stock, and grown either as upright cordons or bushes, they bear abundantly. The fruits ripen with us about the end of August, and for early Apples are well flavoured if eaten as soon as ripe; but they soon become "sleepy" and decay round the core, so that for private use two or three trees are sufficient. Their attractive appearance and pleasant scent would secure them a ready sale in the market.—J. H. W.

—— A GOOD CATCH OF EARWIGS.—Mr. H. Osman writes:—"Having found something was eating the fruit on a Peach and Nectarine tree, I inserted about two dozen earwig traps — Broad Bean stalks, &c. I found yesterday on blowing the contents into boiling water I had caught a very great number. Therefore, to satisfy my curiosity, I counted them, and found 513, then seventy-seven in one trap,

which makes a total of 590 from the two trees. This number seems incredible, nevertheless it is a fact. Are any other readers troubled with such numbers?"

—— The Czar Plum.—This is a good culinary Plum, and a sure and heavy cropper. It ripens with us early in August, close after Early Rivers. We grow it as single cordons on a wall with an east aspect, and it never fails to bear a heavy crop of fruit. For market purposes it will be found as remunerative as Victoria, and would be cleared off three or four weeks before that variety was ready.—J. H. W.

—— Gardening Appointment.—Mr. R. Mitchell, for two years foreman at Gifford House Gardens, Roehampton, has been appointed gardener to W. Cunard, Esq., Orleans House and Lebanon Gardens, Twickenham. Mr. John Thomson, for the past six years head gardener at Dennis Hall, near Stourbridge, Worcestershire, has been appointed gardener to R. W. Wilbraham, Esq., Delamere House, Northwich, Cheshire.

—— Mr. G. Cummins, in sending a few very fine flowers of Annual Chrysanthemums, writes :—"These have proved to be valuable wet weather plants. They have not only grown vigorously, but have bloomed profusely all the season. I do not remember seeing a finer lot than I witnessed the other day at Putteridge Park, Luton, where these plants are used extensively in beds and borders. I enclose a few blooms to show the quality as grown there."

—— Melon The Blenheim Orange.—W. Iggulden writes : "I can fully endorse all that Mr. A Young says in favour of this excellent Melon, and am glad to learn he succeeds so well with it. Mr. Austin used to grow it extensively at Ashton Court, and I have seen numerous very handsome fruit, both early and late in the season, there produced. This Melon, unlike many other varieties I could name, still retains all its original good qualities, and if there is any fault to be found it is its rather too vigorous habit of the growth at the outset. We cannot set a heavy crop on the first laterals, but the plants go on growing and setting fruit at short intervals throughout the season. If not eaten for a few days after the fruits are cut from the plants the quality is exceptionally good, and instances have come under my notice this season where Blenheim Orange in good condition has beaten the best green flesh varieties in competition with it."

—— A Companion for Blenheim Orange.—The same cultivator says : "This will be found in Hero of Lockinge, another variety that has not lost its good reputation in any way. With us it is fairly vigorous, very free setting, and the fruits are of good form, very handsomely netted, and bright golden yellow in colour. This again is not fit to eat when first cut from the plant, and ought to be kept till the rind is soft, otherwise only about half the flesh is eatable. Hero of Lockinge and the foregoing are equally well adapted for either house or frame culture, and are the two varieties most extensively grown here."

—— Cloves in Pots.—"S." writes :—"Anyone who has not grown the old crimson Clove in pots for early flowering would do well to do so, as well grown plants are extremely useful, affording flowers for cutting that from their rich perfume and colour are always welcome. A stock of plants is easily obtained when a few old roots are to hand. Layer at once the current season's growth. When well supplied with roots pot them two in a 5½-inch pot, using moderately rich soil. Stand them in a cold frame until new roots are formed, then an open position out of doors on a bed of coal ashes will suit them for a time ; afterwards a cool house will answer for them, where they will flower."

—— An Early Peach.—Peaches have been generally scarce and very late as an outdoor crop, but one variety I have noticed as being particularly good and early this year is the Waterloo. It is an American kind introduced into this country by Mr. Rivers. The tree under notice perfected its crop early in August, which may be considered very early for the dull sunless season experienced. It is planted against a south wall, and was fully three weeks earlier than Hale's Early, occupying a position close beside the first named. Those who contemplate planting any Peaches this autumn for outdoor uses would do well to bear the earliness of the above variety in mind.—W. S., *Frome*.

—— Early Frosts.—The present season has been one of the most variable and cold experienced for many years, and frosts of a slight character have been more frequent than many imagine, at least in this neighbourhood. Probably they have been noticed here through the close proximity of the river Froome and the low lying nature of the surroundings. But from whatever cause there was during August sufficient frost to affect tender vegetables, such as Vegetable Marrows and Runner Beans. On the mornings of the 9th and 10th of the present month the mercury stood at freezing-point, and hoar frost was plainly visible on the ground. But so far no apparent injury is perceptible from the low temperature on vegetation generally.—W. S., *Frome*.

—— New Melons.—A correspondent writes : "It is so rare now that Melons are certificated, only four varieties we believe having received such honours during the last three years (this showing a very wise discretion on the part of censors), that any new aspirant so marked for public approval is quite worthy of special mention. Mr. William Palmer's Thames Ditton Hero, honoured last week, had been grown in a frame, for which system of culture this variety is especially valuable. It is a very free bearer and setter, having fruiting blooms at every lateral, often a pair together. The variety is of good flavour and of a suitable size for table. It is the result of a cross between Scarlet Premier and High Cross Hybrid."

—— At the last of the monthly meetings organised by Belgian Horticulturists at Ghent the following awards were made :—Certificates of merit to Cypripediums niveum, Stonei, and Harrisianum superbum from Messrs. Vervaet & Co. ; Tricopilia species from the same firm ; Odontoglossum grande superbum from M. James Bray ; Dracæna norwoodiensis from M. Desmet-Duvivier ; Maranta inconifera from M. Alexis Dallière ; and to the following new seedling Coleuses from M. Edouard Pynaert—M. Paul Dutrie, Madame C. Van Geert, Mdlle. Rosa Rooses, Comte de Grünne, Etoile de Gand, Souvenir de Jersey, and Souvenir de Guernsey. Honourable mention to Cypripedium Javanico-superbiens (for novelty), Lilium auratum superbum (for floriferousness) from M. Bernard Spae ; and Adiantum Weigandi (for cultural merit) from M. Liévin Spae.

—— The Irish Exhibition.—Lord Arthur Hill requests the insertion of this paragraph, with a view to aiding the industrious peasantry of Ireland. Though not a gardening subject we willingly comply for such a purpose :—"Lately there has been a great increase in the articles, such as lace, embroidery, underclothing, painting, knitting, wood carving, &c., sent over to the Old Irish Market Place by poor peasants in Ireland. In most cases this work is the senders' sole means of support, and it is most desirable that it should not be returned to them unsold. Visitors to the Irish Exhibition would be giving material help and encouragement to these peasants by going to the Old Irish Market Place, and making some purchases, however small. The inmates of many a humble cottage in Ireland will have cause to be thankful during the coming winter if the work they have sent to the Exhibition is sold."

—— The following is sent to us for publication :—"In view of the imminent Revival of the Florists' Tulip, Messrs. Stuart & Mein have just completed the purchase of the famous collection of Mr. David Barber, Stanton-le-Dale. The collection contains several thousand bulbs of the best varieties in existence, many of them never having been offered for sale to the public. Mr. Barber, who has several times won the champion cup and other prizes open to all England, is one of the last of his generation of enthusiastic Tulip growers. He is upwards of seventy-three years of age, and for a period of upwards of forty-three years he has gathered together and grown his favourites. It is satisfactory to record that this famous collection has come to Scotland, and we are sure that nothing will be left unaccomplished that skill and enterprise can do to make the collection equally famous in this country."

—— The following summary of meteorological observations for August, 1888, is supplied by Mr. Joseph Mallender, Hodsock Priory, Notts :—"Mean temperature of the month, 57·5°. Maximum on the 9th, 81·1° ; minimum on the 18th, 38·3°. Maximum in the sun on the 9th, 132·7° ; minimum on the grass on the 16th, 33·9°. Mean temperature of the air at 9 A.M., 58·4°. Mean temperature of the soil 1 foot deep, 58·4°. Total duration of sunshine, 133 hours, or 30 per cent. of possible ; we had five sunless days. Total rainfall, 2·06 inches. Maximum fall in twenty-four hours on the 28th, 1·16. Rain fell on thirteen days. Average velocity of wind, 8·3 miles per hour ; did not exceed 400 miles on any day, and fell short of 100 miles on four days. Approximate averages for August—Mean temperature, 60·2°. Rainfall, 2·52. A cold rather dull month, but not wet until near the end ; in fact, if not for the heavy fall on the 28th it would have been a very dry one."

—— Gros Maroc Grape.—Your correspondent "W." asks, page 246, "Are there not two forms of this Grape in cultivation?" The same

thing has struck me several times lately. We have four Vines of this Grape growing in a Muscat house, three of which are oval-berried, while the other has rounder berries. So far as I am able to judge they are all raised from eyes. Dr. Hogg gives the oval-shaped form as the true type in the "Fruit Manual." As "W." remarks, it is a very handsome Grape, producing fine bunches and berries. With us the smaller bunches are better finished than the larger ones, but its good qualities are decidedly external so far as my experience goes. It is subjected to the necessary amount of fire heat to ripen Muscats in September, but its flavour is never more than third-rate. It does not keep in good condition after November with us. In fact it is held in such little favour here that it will be entirely discarded, for only good flavoured Grapes are appreciated.—JAMES B. RIDING.

—— SHANKLIN, ISLE OF WIGHT, HORTICULTURAL SOCIETY.—Mr. C. Orchard writes:—"One of the most successful affairs I have seen to augment the funds of a Society took place at Shanklin last week. It will be remembered that on the day the Show was held it was fearfully wet, and consequently the visitors were deterred coming to the Show and visiting the very beautiful grounds of Rylstone, the seat of Mons. Spartali. On Tuesday, the 11th inst., they were given another opportunity. The Treasurer, H. Gibbs, Esq., and the Committee organised a procession through the town, when many of the characters from the recent carnival at Ryde took part, headed by two bands of music. They paraded the town, and on arriving at Rylston found the grounds, also the dwelling house and the beautiful summer châlet, splendidly illuminated with coloured Chinese lanterns; these, with the coloured fire that was provided amongst the shrubs and in the dells, gave it quite a fairyland appearance. Fifty pounds in sixpences were taken at the gates, and although it is estimated there were quite 3000 persons there, it is satisfactory to know that there was scarcely a flower or a tree damaged."

—— THE ENGLISH APPLE AND FRUIT-GROWING COMPANY.—The prospectus of this Company, which has been expected for some time, is now published. The capital proposed to be raised is £50,000 in shares of £1 each. The Directors of the Company are Messrs. C. J. Heald, Brighton; A. F. Barron, Chiswick; J. Cheal, Crawley; J. Roberts, Gunnersbury; with power to add to the number. A contract has been entered into to purchase nearly 300 acres of land in Kent suitable for fruit-growing, the price for which is £7375. £1000 worth of shares appear to be allotted to the promoters, but will not bear a dividend till the ordinary shareholders have received a dividend of 5 per cent. on their shares, nor will the Directors receive any fees until a dividend has been paid. Power is reserved to the Company to plant, raise, grow, purchase, and sell fruit and other trees, plants, flowers, or any market garden and agricultural produce, and to act as brokers and commission agents in the disposal of fruit and crops of every description; also to erect buildings, provide machinery, &c., in furtherance of the objects in view, and to preserve fruit by boiling, bottling, canning, drying, cooling, candying, and other methods of storing and preserving fruit, together with all other provisions that the wit of man can devise for rendering the undertaking successful. Messrs. Sampson Morgan, Emptage, Rawson, Gladstone and others may be expected to invest largely in shares in the Company, since they have endeavoured to show that fabulous profits are to be derived from the cultivation of fruit in this country; but, seriously, a well managed system of fruit-growing and distribution ought to be fairly if not highly remunerative. Mr. Richard Dean is the Secretary of the new Company.

—— THE COLD STORAGE OF FRUIT.—As the experiments continue, it may not be without interest to briefly report progress. At the last meeting of the Committee, held on the 13th inst, John Lee, Esq., presiding, examples previously placed in the chill room were examined. The temperature of this room ranges about 35°. Figs, quite ripe when placed in store on August 30th, had kept surprisingly well; the dark coloured fruits appeared quite unaltered, but two of the lighter coloured were spoilt. Plums from Chiswick, stored at the same time, were as good as ever. Of a dozen outdoor Peaches, eight were in good condition, two fair, and two spoiled. Peaches and Nectarines grown under glass at Sawbridgeworth, also Oullins Golden Plums, placed in store at the same time (the 30th ult.) were in fine condition. Peaches from Messrs. Cheal & Sons, stored on August 31st, were in good condition, but a Melon with them was quite spoiled. Bradshaw Plums from Chiswick, placed in store at the same time, were unaltered, but Tomatoes, except a few yellow fruits, were spoiled. This is the second failure with Tomatoes, and they do not appear to be able to endure the cold. Many of the Cherries—a bad sample stored wet on August 8th—were still sound, and it was thought that those which failed were crushed or injured at the outset. It is the opinion of the Committee that for keeping purposes the fruit must be free from blemish. Some of the Cherries (red) in the freezing room (temperature 21°) were quite hard, others (black) being yielding to the touch but frozen inside. Some Cherries taken from the chill room a fortnight ago and steadily thawed were good and well flavoured the following day after a cool sojourn of twenty-three days, and there are doubtless others that have now been in the chamber forty days equally good. Can northern friends oblige by posting a few Gooseberries and Currants to Mr. D. Tallerman, Cold Storage Company, Leadenhall Market, 79½, Gracechurch Street, London? They will be gladly accepted and fairly tried. They should not be over-ripe, and packed to arrive without being bruised if possible. Peaches are best enclosed in tissue paper before being packed in boxes with wadding. All fruit is best stored in closed boxes as if for transit, as when exposed Cherries at least lose their bright fresh colour, and it would probably be the same with other fruits.—J. WRIGHT.

SEASONABLE OUTDOOR FLOWERS.

SUCH seasons as the present one teach us many lessons as to the best plants for unfavourable weather. For the guidance of amateurs I have jotted down the names of a few I have found suitable in the past season.

Leucanthemum maximum is a capital border plant growing 4 feet high; its deep green foliage forms a splendid base for its Marguerite-like flower heads, which are freely produced. They last long in water when cut, and readily mix with other flowers and grasses, and as a rule they are much prized by the ladies. This plant will grow almost anywhere where it is exposed to light; a strong soil suits it capitally. It is so thoroughly hardy that a large stock can be obtained in a short space of time by dividing the roots either in the autumn or spring.

Rudbeckia lævigata is rather uncommon in gardens. Where a graceful plant for either cutting or the decoration of the borders is a consideration, this Rudbeckia stands in a foremost position, its bright yellow flower heads and deeply cut leaves form a welcome contrast to brighter surroundings of more highly coloured flowers. This plant grows from 4 to 5 feet high, and flowers freely for at least two months.

Actæa spicata is well suited for the herbaceous border where plants 4 feet high are required. It grows in an upward direction, bearing long stout flower stalks, which branch into other shorter ones at intervals. Its creamy white blossoms show to advantage over the broad green leaves, which are produced freely. When once established this plant grows rapidly, but at first when in a weak state is a "miffy" plant.

Harpalium rigidum is another easily grown plant, reaching a height of 3 feet, sometimes more. Where yellow flowers are in request this Harpalium is one of the best, as it grows freely and flowers profusely, and is easily increased by dividing the roots.

Matricaria indora fl.-pl. is at the present time flowering abundantly, and has done so for the last eight weeks. A stock of plants is easily raised by inserting cuttings in sandy soil in a cold frame during the present month, choosing those cuttings which have not flowered, cutting them in 3-inch lengths. Allow them to remain in the frame until April, when they may be removed to their permanent position in the borders. Plants annually raised are preferable to the older plants, as the latter being so large require much space.—M.

LILIUM NEPALENSE.

AT the last meeting of Royal Horticultural Society's Committees one of the most distinct Liliums was exhibited that has been seen for a long time. L. nepalense has been heard of before, but flowering plants have not been previously seen in England, and Messrs. H. Low & Co. are to be congratuated on their valuable acquisition. The bulbs were received from a mountainous district in the East where the temperature falls below freezing point, and though the plants exhibited were only bearing solitary flowers, the same as plants from small bulbs of most Liliums do, yet the collector of L. nepalense reports that he has seen sixteen flowers on one stem. Therefore with more vigorous plants an increase in the number of flowers may be expected in this country. In both Paxton's and Johnson's Botanical Dictionaries L. nepalense is recorded as having been introduced into England from Nepaul in 1825. In Dr. Wallace's work on Lilies it is said to have been "introduced in 1855, but not in cultivation in Europe at the present time" (1879). From this work we cite the following in reference to the re-introduced species, the remarks being taken from Baker's synopsis of the genus.

"L. NEPALENSE.—D. Don, Wern. Trans. iii., 412; Prodr. Nep. 52; Wallich. Pl. Asiat. Rar. iii., 67, 291, Cat. 5078; Kunth, Enum. iv., 267. ——L. oehroleueum, Wall. in hb. Lindley.—Bulb, not known to me; stem, 2 to 3 feet high, straight, slender, smooth; leaves, 30 to 50 in number, seattered, of a shining green eolour, aseending, smooth, laneeshaped, aeute or linear, the lower ones 3 or 4 inehes long, 6 or 9 lines broad in the middle, distinetly 5 to 7 nerved, the upper ones shorter and distant from eaeh other; flowers, solitary, or few in an umbel, slightly fragrant (pedieels with braets at the base in a whorl of reflexed leaves), or few in a loose raeeme, the lower pedieels aseending, 2 or 3 inehes long, nodding at the top; perianth, 4 or 5 inehes long, broadly funnelshaped, whitish-yellow, more or less tinged with purple on the inside, often marked with seattered dots; segments, oblaneeolate-elawed, bluntish in the expanded flower, faleate in the upper third part, 6 to 12 lines broad at two-thirds of their length from the base; stamens, shorter than the perianth by one-fourth; anthers, narrow, 6 or 7 lines long; pollen, yellow; ovary, 9 to 12 lines long together with the style, a little longer than the stamens; eapsule, ovate, 2 inehes long, obtuse-angled. Temperate regions of the Western and Central Himalayas, at an elevation of 7000 to 9000 feet above sea level, from Gurwhal and Kumaon to Nepaul. Wallieh, Thomson, Jaequemont, &e."

The figure in Elwes' Monograph must presumably have been drawn from a dried speeimen, and differs in eolour from the flowers of Messrs. Low's plants, whieh is rieh maroon only slightly broken, and the segments elearly tipped with greenish gold. The eharaeter of L. nepalense is represented in the engraving (fig. 29), and the plants and bulbs will doubtless be taken good eare of by their possessors.



FIG. 29.—LILIUM NEPALENSE.

HYDRANGEA PANICULATA GRANDIFLORA.

JUDGING from the absenee of this effeetive Hydrangea from the majority of gardens it is doubtful if its great decorative value is sufficiently appreciated, or the method of eulture for having it in the best eondition generally understood. Planted in shrubbery borders where the soil either is, or is soon apt to beeome, exhausted, and the plants pruned in the bush form, they are in a measure effeetive; but to see the huge trusses in all their beauty the plants should be grown in deeply worked and well enriehed soil, eut down to the ground annually, and the beds well dressed with manure, then the vigorous growths and

magnificent trusses cannot fail to arrest attention in September. Hydrangea paniculata grandiflora is well grown at Chiswick, and some fine trusses were exhibited last week in the hall at Westminster. One of them, much reduced, is shown in the engraving, and it will be conceded that a number of such trusses on a plant, or a number of plants grown together, can scarcely be lacking in effectiveness. Cuttings of half-ripened wood strike readily in sandy soil under handlights, and well grown plants are attractive in pots early in the season, but the usefulness of this Hydrangea grown and treated as a hardy herbaceous plant is now more particularly alluded to.



FIG. 30.—HYDRANGEA PANICULATA GRANDIFLORA.

THE APPLE AND ITS CULTIVATION.

Read by Mr. Hugh A. Pettigrew at a Meeting of the Young Men's Improvement Society, in the Castle Gardens, Cardiff.]

THE Apple (Pyrus malus) botanically belongs to the natural order of Rosaceæ, an order which contains all the best of our fruits, such as the Pear, Peach, Plum, Cherry, Strawberry, &c. It is found growing in a wild state in most of the temperate countries of Europe. But, like our grains and vegetables, it is not known from whence the first cultivated Apple came or who introduced it. The fruit is considered by authorities to be one of the healthiest grown in temperate climates.

There are several ways of propagating the Apple, but the most common is that of budding and grafting. The wild Apple, or Crab stock, is the best to bud or graft on, and for this purpose the fruit of the Crab is gathered in autumn, and stored in heaps outside mixed with sand to decompose. In the spring the seeds are sown in beds, and in the following year the plants are lifted and planted in nursery rows. In about three years after sowing they are large enough to be budded or grafted. Budding is generally practised by nurserymen, but those plants that fail to take are grafted in the following spring.

There are several stocks used for grafting the Apple on besides the Crab. There are small-growing varieties called the English Paradise, and the French Paradise or Doucin ; varieties worked on these stocks never grow into large trees, and come into fruiting sooner than those grafted on the Crab, which is called the free stock on account of its vigorous growth. But I am inclined to think there are very few varieties now worked on the real Crab stock, as nurserymen generally procure the refuse from the cider press, which contains the seed of the cider Apple, and pass off Apple trees raised from these seeds as worked on Crab stocks.

Orchard trees should be planted at the distance of 30 feet apart each way. They should have clean stems of 6 feet before branching, and not be more than three years old from the time of budding. Trees that have stood in nursery rows for years, and have been pruned repeatedly to keep their heads within bounds, when lifted have scarcely any fibrous roots, and after planting become stunted and fail to make any growth for several years, whereas young vigorous trees planted at the age mentioned start into growth at once, and soon become large and fruitful. In planting, the pit should be made large enough to hold all the roots without being cramped, and a strong stake driven into the centre of it to tie the tree to. It should not be placed deeper than it was when growing in the nursery rows. It should be placed close to the stake, and the roots spread out on all sides, then covered with the finest of the soil, finishing with the rougher, then made firm and mulched with manure to exclude air and to keep down evaporation. In securing trees to stakes, which is important, means must be adopted for preventing abrasion of the bark.

The principal culture of these trees consists, after the first few years, in cutting out all the useless and cross branches, and top-dressing the ground with good manure to keep them in a vigorous and fruitful state. As young cattle and sheep are generally grazed in orchards and often injure the bark of the trees, I advise all, when making a new plantation to protect them with barbed wire cages, similar to those that are used here for protecting the avenue trees. They are much cheaper and answer the purpose better than any other kind of protection that I know. So much for the orchard.

In the kitchen garden Apple trees are planted and treated quite differently. The trees here are planted by the sides of the walks, some 6 to 8 feet from the Box edging, and 12 feet asunder or more to suit the quarter they are planted in. I have recommended that the orchard trees be three years old from the time of budding, but for planting in the garden I prefer maidens, or plants of one year's growth from the bud, to those of four or five years' growth, for the same reason that they will grow much faster than the older trees, and can be trained to the form desired much easier than those mentioned. To form pyramids they should be carefully planted and mulched, and the first year cut down to within 18 inches of the ground. The following year they will produce three to four shoots ; the centre one should be retained to form a leader, and if vigorous left 18 inches long, and the other shoots which are to form the base or framework of the tree cut back to 1 foot in length ; but a great deal depends upon the strength and ripeness of the wood. In all succeeding years the leading shoot will produce from four to five branches, and the central one of these should always be retained as a leader, leaving the others if well placed to fill up the sides of the tree. In pruning 1 foot or more should be left of the shoot according to its position and strength every year, and if possible it should be cut at a strong leaf bud which points outwards, and all the branches that cross each other or points towards the centre should be cut clean out until the tree has attained its full size and shape, after which the trees may be spurred in regularly every year at pruning time to form fruit buds. I do not believe that stopping and pinching the young shoots during the summer adds to the productiveness of the tree ; besides, it is impossible in large gardens where there is a great collection of trees to find time to do so.

I do not advise root-pruning to be practised except in cases where the roots have penetrated a cold, wet subsoil, in which the trees produce strong, rank, unfruitful wood. When such is the case, and the trees young, they should be lifted entirely, the strong roots cut back, and the fibrous roots spread out near the surface ; but when the trees are large it is advisable to dig a trench some 3 or 4 feet distant from the trunk all round, cut back the strong roots, and add some good soil to encourage fibry roots to grow near the surface. The foregoing remarks have special reference to the trees worked on the free stock.

Apples worked on the Paradise are generally grown as bush trees, espaliers, or cordons, and can be planted much closer together. They produce a few fine fruit when well grown, but the trees do not live so long nor produce the same quantity as either standards or pyramids, nor have they the same noble appearance. Their principal advantage is for amateurs with small gardens, where a great variety may be grown in a small space. They are pruned and trained somewhat after the style of Gooseberry bushes, open in the centre, and attaining the height of 6 or 7 feet.

Espaliers are trained on wire trellises, something similar to the way we train Pear trees on walls—they may be horizontal or fan shape, according to the taste of the cultivator. Cordons may be trained either single or double on wires on the edge of garden walks, or near the base of low walls, a foot or more from the ground. These trees are easily protected from frost or birds, which is one of the advantages claimed in favour of their culture, but they can never produce a sufficient quantity of fruit to make them popular with market gardeners.

I have said nothing yet about the insect pests or the diseases to which the Apple tree is subject. The canker is the most difficult to deal with. Some varieties of the Apple are more subject to it than others. When planted in low damp situations the trees get covered with moss and lichen. They are also subject to attacks of American blight, and this, in my opinion, is one of the principal causes of canker, but there is great diversity of opinion upon this. When once a tree is attacked with canker it is almost impossible to cure it. Moss and lichen can be destroyed by dusting the trees with newly slaked lime on a damp morning during the winter months, and American blight can be kept down by frequent syringings of petroleum mixed in water in the usual way, a glass of petroleum to a gallon of water. It should be kept in perpetual motion when being applied.

GATHERING AND STORING FRUIT.—Fruit for storing should never be gathered until it is perfectly ripe, which can be easily ascertained by cutting an Apple through the centre and examining the seeds ; if they are found to be black they may be gathered with safety and stored in proper places.

I have often wondered why Apple trees have not been planted in our hedgerows. If landlords were to plant a certain number of the best and most suitable varieties in the hedgerows of every farm, and make an arrangement with the farmer to have them properly pruned and kept in good condition, also to replace any that died or met with accident, I have no hesitation in saying that they would produce enormous quantities of fruit ; and further, that this system, if generally adopted, would in the course of twenty years become a source of wealth to the country, of which the farmer and the landlord would have a good share.

POTATOES IN 1888.

IT may be thought early in the season to write about the Potato crop, but unfortunately the state of it even now is so pronounced as to fully indicate its condition, and that may be briefly described as very bad ; indeed it is the most peculiar Potato year I ever experienced. I do not as a rule approve of monstrous Potatoes. They are not half so good as medium-sized tubers for the table, but for exhibition it is necessary to have them rather large and showy, and I grow a few every year for competition. These are produced in much richer soil than the general crop, and at the beginning of April last some were planted in compost that ought to have produced huge tubers, but in the best soil they have not gained the size generally attained by those in the ordinary quarters, and the latter are very small. In fact, all the Potatoes, like the Apples and Pears, are much below the average in size, and they will not grow any more now, as the leaves and stems have died down. Many of the early and midseason sorts have been quite withered in the stems since early in August, and now most of the late ones are in the same condition. This applies to gardens over a wide district, and

I notice that many of the field crops are all hut stemless. This I regard as a peculiarity of the Potato erop of 1888. I never knew them to lose their stems so early and so eomplctely before. It may be partially due to disease, but not altogether, as I notice some varieties which are very little diseased have lost their stems as much as those which are nearly wholly diseased. It seems to me that the excessive wet, eold, and absence of sunshine has caused the stems to perish so freely. Potatoes will not swell without a healthy stem and green leaves. Has this dying of the stems prematurely been general all over the country? It certainly has in our county, and while on a little judging tour lately I noticed the same thing in at least six other counties. The question will naturally arise, How will it affeet the Potatoes? It has done so already in the smallness of them, and I am also of opinion it has interfered with the quality. Some varieties that were exeellent on the table last year are the reverse this season, being soapy in texture and inferior in flavour, and I do not see any prospect of their improving. Further, the early dying down of the stems is certainly not in favour of the tubers maturing thoroughly for seed, and I fear the evils of this season will show themselves in an objectionable form in the erops of 1889.

I am greatly in favour of using no tubers for seed excepting those that have developed freely and matured thoroughly, hut these will be diffieult to find, and great care should now he taken that the tubers for seed are seleeted from the best ripened rows. We do not dig up all our Potatoes and select the seed tubers after the best have heen picked out for use, hut a few rows are left intaet for seed, and this is a good way of securing fine planting tubers. In the month of June, when many of our early Potatoes were dug for use, two rows of each were left for seed, and as these were developed and partially ripened before the had weather set in, we are sure of having a quantity of good early seed at least; but it is the midseason and late varieties that will he difficult to secure, and it is these that attention ought to be directed to now. The stems of these died down so fast that the ripening of the tubers did not keep paee with them, as is generally the ease, and this year a ripe, or seemingly ripe, stem is no indication of a ripe root. We have proved this, as in digging some to see what the result of the decayed stems was, we found the skin quite loose on the tubers, and a slight friction brought it off. This is proof that they were not ripe. and I would not dig and store Potatoes in this condition, as they would not keep well, and although they may not mature much more if left in the ground the skin will be sure to become firm, and this is an advantage.

The disease is more general and severe this season than it has heen for seven years. Last year we lifted several tons of tubers, and a hat box would have held all the diseased ones we could pick from them, but this year half of some sorts are diseased; others are not so had, but all are affeeted, and a well known gardener was telling me the other day that three parts of his erop was destroyed. It is therefore a year when disease has to be taken into account, and there is no resisting it. Some amateurs in the neighbourhood eut all the stems off level with the soil so soon as the leaves hegan to spot and wither, and I think these are now the worst diseased. Others trod the ground very firm over the top of the drills. That was useless. In short, the murrain has run its course, and we are as helpless to resist it as if such a thing as curing the Potato disease had never heen suggested; but we ought to do our hest with the sound tubers, and advantage should be taken of dry days to dig and storc the erop. Do not attempt to gather them as they are turned out, but throw them on the surface on a fine morning, where they ean he exposed to the sun and wind to dry. This is a good stride towards their successful storing, as unless they are stored dry they will not keep well during the winter. It is also of the greatest importance that the had tubers be separated from the good, and the hest time to do this is when they are spread out on the land after digging.

The hest place for storing Potatoes when newly lifted is in a dark but airy shed, and if they have to be placed in a light shed for a time they should he eovered with straw. This is better than sheets or mats, as these retain the moisture too much. We shall this year storc Potatoes for use that would have been given to the pigs last year as heing too small for the kitchen.—A Kitchen Gardener.

COMMERCIAL FLORICULTURE AND AMERICA.

[Read before the Massachusetts Horticultural Societv by Mr. W. J. Stewart of Boston.]

(*Concluded from page 218.*)

Is it surprising that horticultural exhibitions, pure and simple, appear to he losing ground? The time when people would erowd into a hall and gaze with open-mouthed wonder on a table eovered with dishes of Pears, and Radishes, and Apples, or rows of bottles filled with a variety of flowers, is past and gone. Commercial floriculture gives the people a free exhibition every day throughout the winter in the florists' windows on Tremont Street such as in the hortieultural exhibitions of a few years ago was never dreamed of. The same is true of fruit. The Italian fruit-stands on our street eorners, with their loads of Strawberries in April and May, and of Peaches and Water Melons in July, would have been worthy of an admission fee twenty-five years ago. Even Orchids as rare novelties have seen their best days. The commercial florists have their eyes on the Orchids, and they are doomed. They will not long he the flower of the few. Not all of the work done by the florists, however, has heen in the direction of art or good taste. We have seen floral designs, so ealled, which were nothing but hideous monstrosities; and sueh things have given the eritical a fair foundation for wholesale denuneiation of the whole business. Perhaps the best way to remedy this state of affairs is to educate the puhlie to a higher appreciation of work that is really artistie.

Floral designs need not be monstrous, and many even that are formal can be made beautiful in the hands of a true artist. Here is the opening for the successful floral exhihition of the future. At the recent Orchid Show held in New York, the most noticeahle feature and that which went farthest towards making it a success was the manner in which the grouping was done. Everything was arranged with an eye to artistic effect, so that altogether it made one perfect and harmonious whole. Luxuriant banks of Ferns filled the shady corners, while beautiful Pitcher Plants hung ahove. Orchids which grow naturally in the air were attached to old mossy branches overhead, while under the shade of Palms and Tree Ferns whole colonies of Cypripediums peeped forth from verdant banks. After seeing such a picture, no one would think of going hack to the old style of exhibition where each contrihutor sets up his own row, and the result is a lot of loose ends and detached groups without harmony or system, and what might otherwise be a grand and beautiful display is completely spoiled for lack of a comprehensive plan and a master hand to carry it out.

Within the past three years a remarkahle movement has been taking place among the florists. They have not only a national society which is already a magnificent organisation, hut they are uniting in different cities all over the country into Florists' Clubs, so called. What is the cause of these simultaneous movements, and what will he the result? I think the cause is principally that the commercial florists find that the horticultural and agricultural societies and similar organisations, from their very composition and nature, cannot adequately represent or serve the best interests of so large and progressive an element. The gentleman of leisure with his few dozen of pet Raspberry bushes will carefully pick off a couple of quarts of fruit and hie him to the city; occupying his whole Saturday forenoon with arranging them in a dish on a table, and watching with jealous eyes the dish of his neighbour alongside. Another will huy a couple of baskets of Verbenas in the spring, take them home, and plant them in his little front garden, and when they come into flower he too will start for the city with his Verbena flowers, which he will stick into a row of bottles, and then hang around to see whether the committee will not recognise his self-denial hy placing upon his exhibit a considerate one dollar gratuity. But commercial florists have no time or inclination for such trifling. It is too far behind the times. Regarding essays and discussions, there are so many questions that are all-important to the commercial florist of 1887 that he cannot afford to divide the time with the market gardener, the farmer, and the fruit grower.

When the Massachusetts Horticultural Society was organised floriculture was but a babe in this country. There was nothing to he made from it pecuniarily. Its members had but little in the way of precedent or example to encourage them, and it mattered not whether they were carpenters, farmers, or dry goods dealers; they were welcome so long as they thought enough of horticulture to use their money and their efforts for the good cause. All honour to them. They builded better than they knew; and what more can be wished for the new organisations than that at the close of an equal period of time they may be able to point to a record of usefulness equal to that which is the pride of the Horticultural Society? If it had not been for this and kindred societies commercial floriculture would not have heen what it is to-day. But, as the child when grown to robust stature leaves his father's home and strikes out to make his mark in the world—as the thriving offshoot from the potted plant, finding its quarters cramped, must be taken away and put in a place where its ambitious vigour can find room to work, so the commercial florists, as they feel their strength and as they begin to know their needs, strike out for themselves in order that they may devote all their time and their best energies to those questions which most concern their own welfare. They do not by this action sever the ties that bind them to this paternal home. They will be seen and heard here, and you will find them all the better sons for having got away from their leading strings and proved their own strength.

They are now taking a lesson in self-reliance and independence—not as individuals, but as a body. The influence which can be exerted by such a union of interests, and the pressure which can be brought to hear wherever and whenever it is necessary, were shown in Congress last winter, when an oppressive hill to double the postage on seeds was withdrawn, chiefly through the efforts of the Society of American Florists. There is plenty of work for them that has not yet been touched. The disgraceful practice of sending out goods under false names, which has flourished in so many quarters, must be attacked with vigour and fought relentlessly until this stigma is removed from the reputation of American dealers; and the travelling impostors who have heen going over the country unmolested for years, with their gaudy pictures of flowers the like of which never grew, will soon find the place too hot for them.

The florists are at last heginning to think and act for themselves, and substantial benefits cannot fail to follow for them and for the public. It has been a long struggle for them. Hard work all day and often all night, without a holiday and with scarcely a Sabbath that they can call their own—this has always been, and to a certain extent always must be their lot. These men who have reversed the seasons and have turned dreary winter into a long summer day, whose vocation is to make the home brighter, to add to the beauty and joy of the bridal festival, to cheer up the sick room, and to lessen the loneliness and desolation of the funeral, have come up from very humble beginnings. What they now have has been well earned, and the business of which they are to-day

proud has come not by chance or good fortune, but is the result of application, perseverance, and patient toil.

HORTICULTURAL SHOWS.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

At the autumn Show of the above Society, held in the Waverley Market, Edinburgh, fruit as usual formed the principal feature, the number of classes provided therefor being seventy-six. For plants there were fifty-three classes, six of which were confined to trade growers; cut flowers were provided for to the number of thirty-six classes, nine of which were for nurserymen; and for vegetables twenty-three, the latter being, perhaps, better represented than any other section of horticultural produce. The Council also offered prizes for bees and honey; but the exhibits of these were of a very limited character. Coming more particularly to the several sections, that devoted to fruit was found to be generally poorly filled, and although with a few outstanding exceptions the quality was like the quantity—below the Edinburgh standard. For the prizes offered for four collections of fruit there were only nine staged altogether. For twelve dishes Mr. Hunter, Lambton Castle, Durham, was the only exhibitor, and received the first prize for a good collection, in which were three good clusters of Black Hamburgh, three Alicantes, one Gros Guillaume, and two of what were apparently Gros Colman Grapes. Two fine dishes of Peaches, Apples, fine Marie Louise d'Uccle Pears, good Nectarines, Melons, &c., were also staged. The same exhibitor was also first for eight dishes of fruit, comprising a fine Smooth Cayenne Pine Apple, good Gros Colman (?) and Duke of Buccleuch Grapes, Best of All Melon, extra Brockworth Park Pears, fine Princess of Wales Peaches and Elruge Nectarines, and a dish of fine Worcester Pearmain Apple. Mr. McKelvie, Broxmouth Park, Dunbar, was second, and Mr. McIntyre, The Glen, Peebles, third.

For a collection of twelve dishes of open air fruit Mr. Fairgreive, Dunkeld Gardens, was easily first with good Apricots, Williams' Bon Chrêtien and Jargonelle Pears, Hales' Early Peach and Early Louise Peaches, Victoria and Kirke's Purple Plums, Morello and Late Duke Cherries. Mr. Low, gardener to J. Paton, Esq., Viewforth, Stirling, was second. For a collection of twelve dishes of orchard house fruit Mr. Hunter was the only exhibitor. The most noteworthy dishes were some remarkable Beurré Diel and Pitmaston Duchess Pears, each said to weigh 32 ozs. to 35 ozs. each, very fine Queen Apples, and Warner's King and Ecklinvilles, with Peaches, Nectarines, Plums, and Figs.

A first prize of £10 was offered by Messrs. W. Thomson & Sons for eight bunches of Grapes, and this and the other good prizes offered by the Society brought out the only really brisk competition, six growers staging. The premier ticket was finally placed on the Grapes exhibited by Mr. McHattie, gardener to the Marquis of Lothian, Newbattle Abbey. These were large clusters averaging 4 to 5 lbs. each, and consisted of extra fine Black Hamburgh, Madresfield Court of high quality, magnificent clusters of Muscat of Alexandria, and very fine Duke of Buccleuch. Mr. McKinnon, gardener to Viscount Melville, Melville Castle, Lasswade, was a very close second with smaller better finished bunches, which might have very well been placed first by a different set of judges. Alicante, Gros Maroc, beautiful Golden Hamburgh and Muscat of Alexandria, a little late, were the leading varieties staged. Mr. Boyd, gardener to A. Forbes, Esq., Callender House, Falkirk, was third, and Mr. McKelvie fourth, with Grapes better than the preceding, but spoiled by a crushed example of Golden Hamburgh. For four bunches Mr. McHattie and Mr. McKinnon held the same position as in the previous class, and with the same class of Grapes. For two bunches of Muscat of Alexandria Mr. McHattie was first with fine clusters, and Mr. McKelvie second with good examples. The last-named was first for two Black Hamburgh, extra fine, Mr. McHattie second, also fine. For one bunch of Muscat of Alexandria, Mr. Green, gardener to the Marquis of Tweedale, Yester, was first. Black Hamburgh were a well filled class, Mr. Copeland being first. Mr. McKinnon was first with extra finely finished Black Alicante. Mr. Boyd had the first for Alnwick Seedling; Mr. Murray, Polmont, for Gros Colman fine, and Mr. McHattie for Lady Downe's. Mr. McKinnon had first for Madresfield Court, and Mr. Potter, gardener to Mrs. G. Moir, Carlisle, with extra fine Buckland Sweetwater was first in the any other class of white. Mr. Murray's Gros Colman was the finest "bloomed" Grape in the Show.

Of Pine Apples there were several good fruit, Mr. McIndoe, Hutton Hall, Yorks, being first with a very fine Queen. In the class for that variety Mr. McIntyre first for one Smooth Cayenne and also for two Pine Apples. Peaches formed a large and beautiful show, Mr. McLeod, Brentham Park, Stirling, being first with Barrington. The best Nectarines were fair examples of Humboldt, from Mr. Harkness, Broadmeadows, Berwick. Apples were generally small and green, with the exception of some fine orchard house fruit. To Pears the same remark applies. Of small fruits there was a large and excellent display.

Among plants the principal prizes went in the nurserymen's classes to Messrs. R. B. Laird & Sons, and Messrs. Ireland & Thomson for very fine tables. Mr. Grossart was first in the corresponding class for gardeners. For six flowering plants Mr. Patterson, Millbank, staged examples of Ericas obbata, retorta major, tricolor Wilsoni and Marnockiana, Lapageria rosea, and Statice profusa. The same exhibitor also took the prizes for Ericas with small well-flowered plants. For four Orchids Mr. Curror, Eskbank, took first, having a fine Cattleya Dowiana with five blooms, a large C. Gaskelliana, Miltonia speetabilis, and Cypripedium Spicerianum Mr. Grossart second. For one Orchid Mr. Brotherston, gardener to the Earl of Haldington, Tyninghame, East Lothian, was first with Phalænopsis amabilis with a strong spike. Mr. Curror second with a fine Cattleya Gaskelliana. A good Renanthera Lowi was also exhibited by Mr. Laing. The six Ferns with which Mr. Grossart secured first prize and a challenge cup were fresh good plants.

Of cut flowers the display was limited, and generally below the average in quality. No Gladiolus were shown by nurserymen; several lots were staged by gardeners, but with the exception of the first prize twelve all were inferior. Dahlias were very fine in both sections, Hollyhocks poor. Some very fine cut Chrysanthemums were also staged, but the great feature of this section was undoubtedly the Roses, more particularly those staged by Messrs. Cocker & Sons, Aberdeen, this firm taking first both for thirty-six and for eighteen blooms. The blooms were large, young, of beautiful shape, and exquisite colouring. Particularly noteworthy were Her Majesty, Mrs. John Laing, Baron A. de Rothschild, E. Y. Teas, Senateur Vaisse, Violette Bouyer, Duke of Teck, and A. Rigotard. Mr. Dickson, Belfast, who was second for the thirty-six, had also a fine stand, but blooms older and hardly so fine as the "Aberdonawa." Mr. Croll, Dundee, was second for eighteen buds, with good examples. Mr. Henderson, Clermiston, had the best Roses in the gardeners' section.

Vegetables were largely shown, though to nothing like the extent of last season. For Messrs. Sutton & Sons', of Reading, prizes, seven exhibitors staged collections, every one of which were of superior quality. The best lot came from Mr. Low, Viewforth, Stirling, Celery, Leeks, Onions, Tomatoes, grand Carrots, French Beans, and Peas being especially noteworthy. Mr. Cairns, Jedburgh, held second place also with a grand collection. Mr. McKinlay third, and Mr. D. Logan, Coldstream, fourth. The best collection of salading came from Mr. McKinlay, Blackwood, Lesmahagow. Mr. Milne, Leith, second. Large quantities of fine Celery, Leeks, Peas, Cucumbers, Potatoes, &c., were staged in competition for the prizes offered for special sorts of vegetables.

Among the miscellaneous exhibits an attractive table of seedling Begonias was arranged by Mr. Donnie, Pink Hill. Messrs. Methven and Sons, Leith Walk, contributed a large table of stove and greenhouse plants. From Messrs. Dicksons & Co., Waterloo Place, a table of plants with various florists' flowers—Pentstemons, Pansies, Roses, and Carnations, among the latter of which were blooms of a new variety named Maggie Lauder, which was awarded a certificate. The blooms were much like Mary Morris in appearance. Messrs. Stuart & Mein of Kelso had a table devoted entirely to florist flowers, among which were some very fine Pentstemons, striped Antirrhinums, French Marigolds, &c. Messrs. Munro & Ferguson, St. Andrew Square, contributed a table of cut herbaceous spikes. Mr. Henry Erskine, George Street, Makart bouquets and beautiful crosses, wreaths, and bouquets which is a speciality of this establishment. From Messrs. Laing & Mather, Kelso, came a few dozen good Picotees and Carnations, and a large quantity of their new yellow and rose Carnation R. H. Elliot, a bright looking sort, which attracted much attention, and which was favoured with a first-class certificate. Mr. Campbell, High Blantyre, exhibited a large collection of fine Carnations and Picotees in all the best old and new varieties. The Show was very largely patronised by the public, the large market being several times inconveniently crowded during the course of the two days during which the Exhibition was open.

BRIGHTON.—September 12th and 13th.

For many years the Brighton Horticultural Exhibitions, under the management of Mr. Edward Carpenter, have afforded representative displays of Sussex gardeners' skill. The competition has by no means been confined to the county either, for the prizes offered have tempted exhibitors from a long distance. Plants, flowers, and fruits have been well shown, the last named being especially good at the September Exhibition. Nurserymen have contributed liberally with non-competing groups of plants, &c., but there has been one serious defect in recent years—the number of visitors has decreased, and the receipts have been correspondingly reduced. It is difficult to account for this. The site is an admirable one, for the rooms and gardens at the Pavilion can be made to accommodate an extensive display of the choicest and most delicate produce. The building itself is an interesting one and convenient of access. It is true the rooms are somewhat dark, but when lighted at night they have a beautiful appearance. It would seem that either the Show is not sufficiently advertised in the town or that the price of admission is too high, and perhaps it would be advisable to try the effect of a little more liberality in both respects.

Plants at the Show on Wednesday and Thursday last were not so numerous as usual, but one good-sized tent was allotted to them, while several collections were also staged in the Pavilion rooms. Messrs. Knight & Co., Hastings, had the best six stove and greenhouse plants, followed by Mr. Meachen, gardener to Mrs. Armstrong of Woodslee, both showing specimens of the usual character in these classes. Messrs. Knight & Co. were also first for six Heaths. In the amateurs' classes Messrs. Townsend, Meachen, Moody, Curry, and Collis won the chief prizes. Groups of Ferns have frequently been a beautiful feature at the Brighton shows, but this year only one was staged—namely, that from Mr. W. Miles, West Brighton, which fully merited the first prize awarded. Fuchsias, Pelargoniums, Tuberous Begonias, Orchids, Gloxinias, and fine-foliage plants were shown by Mr. J. Barnes, Alexandra Villas, Mr. Meachen, and Colonel Pepper, Milford Hall; groups arranged for effect coming from Major Way, Wick Hall Hove, Mr. Meachen, Messrs. Stringer & Co., and Mr. H. Head, who secured the prizes in the order named.

Cut flowers were abundant, bright and beautiful; Roses from Messrs. Perkins & Son, Coventry, Paul & Son, Cheshunt, and T. Bunyard,

Ashford, looking unusually fresh and good for the season. Dahlias of all classes, single Pompon, Show, Fancy, and "Cactus" were excellent, Messrs. Keynes, Williams & Co., Salishury; Cheal & Son, Crawley; and Paul & Son taking the leading prizes. Asters, Gladioli, and collections of hardy herhaceous flowers also occupying much space.

Fruit was admirably represented, the general quality heing superior to what could have been expected this season. For a collection of twelve dishes of fruits Mr. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was adjudged first honours, closely followed by Mr. C. J. Goldsmith, gardener to Mrs. C. A. Hoare, Kelsey Manor, Beckenham. Messrs. Ward, Baker, Godley, Osman, and Goldsmith shared the honours for hlack and white Grapes. Pine Apples, Plums, Peaches, Nectarines, Cherries, Melons, being largely shown by the exhibitors already named, with Messrs. Richards, Duncan, Gilmour, and Mundell.

The non-competing exhibits were numerous, the local nurserymen contributing largely hoth of cut flowers and plants.

CHELTENHAM.—September 12th and 13th.

This was generally considered the best and most successful Exhihition yet held by the County of Glonrester and Cheltenham Royal Horticultural Society. The Winter Garden is admirably adapted for horticultural displays, and thanks to Mr. J. Cypher and a few other plant exhibitors, and a great number of competitors with cut flowers, fruit, and vegetables, a grand effect was produced. Mr. W. H. Bridgewater proves a most efficient Secretary, and much credit is due to him for the admirahle arrangements made.

In the most important plant classes Mr. J. Cypher had matters very much his own way, hut it is doubtful if anyone could have wrested premier honours from him, so good was everything that he staged. His collection of six flowering plants consisted of large and fresh specimens of Ericas Eweriana and Thompsoni, Clerodendron Balfourianum, Statice profusa, Bougainvillea glabra, and Paneratium fragrans. The last named was a grand plant with nine immense spikes of hloom. Mr. J. F. Mould, Pewsey, was second, and Mr. Mackie, gardener to Mrs. Ruddle, Tewkesbury, third. For a collection of thirty plants in or out of bloom Mr. J. Cypher was well first, this grand bank of plants heing quite a feature in the Show. It included several fine Kentias, Latanias, Cycads, Crotons, all in good health and colour, as well as many fine Ericas, Clerodendrons, Bougainvilleas, and other well-flowered plants. Messrs. Heath & Son, Cheltenham, were awarded the second prize for a creditable group, the third prize going to Mr. J. F. Mould. Mr. Mackie was first in the open class for six Tuberous Begonias, and Mr. H. Chapman second; and in another class for Begonias, not open to nurserymen, Mr. Enos Smith, gardener to Mrs. Pil rim, was first, and Mr. C. Hill, gardener to Mrs. McNeale, second, the exhihits being most praiseworthy in each instance. Mr. Lewis, gardener to Mrs. Lingwood, had a first prize for Achimenes, and also for Zonal Pelargoniums, Mr. Mansfield, gardener to Mrs. Gillilan, taking the second prize in the latter class. Fuchsias were poorly shown, Mr. Sparkes heing awarded a second prize only. Mr. J. Cypher took the lead with exotic Ferns, Mr. E. Smith being a good second, and the last named was first for eighteen varieties of British Ferns, Messrs. Heath & Son second, and Mr. C. Lodge third.

There were several classes for cut flowers, in all of which the competition was close and good. Messrs. Heath & Sons were well first for twenty four Dahlias, Mr. T. Hobbs, Bristol, heing second, Mr. W. Shaw, Kidderminster, third, and Mr. J. Humphries, Chippenham, fourth. Mr. G. S. Walters, Calne, took the first prize in both classes for Asters, Messrs. T. Evry, and Campbell, Bath, obtaining the remaining prizes. The best twelve varieties of Roses cut in loose hunches of three were staged by Messrs. Heath & Son, Mr. Hobhs being second, and Messrs. Jefferies & Son, Cirencester, third. Mr. G. S. Walters was well first for twelve spikes of Gladioli, and the exhihits of Mr. A. A. Walters, Bath, who followed, and of Mr. T. Spencer, gardener to H. Moffat, Esq., Goodrich Court, the winner of the third prize, were also praiseworthy. In the class for twelve bunches of hardy herbaceous flowers Mr. J. Cypher made a grand display, and were easily first. All were cut with long stems and arranged most effectively in a bank of moss, a welcome innovation well worthy of general imitation. Messrs. Heath & Son were second, and Mr. W. Smith third. Very heautiful and attractive also was the ornamental hasket of plants which gained Mr. Cypher the first prize. In this instance Mr. Wonson, gardener to Mrs. Thompson, was second, and Mr. C. Hill third; hoth having prettily arranged baskets.

Fruit was extensively shown, the quality generally heing very good, and prohahly nowhere else would such low prizes, with the exception of one class, attract so much competition. An extra class was provided for a collection of nine dishes of fruit, from which Pine Apples were excluded, and this attracted nine competitors from various parts of the country. The first prize, value £10, was won by J. Dawes, gardener to M. Biddulph, Esq., M.P., Ledbury, who had fairly good Grapes and excellent Peaches, Figs, and other choice fruit. Mr. W. Child, gardener to the Earl of Coventry, Croome Court, Severn Stoke, was awarded the second prize of £5, the third prize of £2 going to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, the exhihits in each instance heing excellent. An extra prize of £5 was given to Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, who, hut for an unfortunate error in staging nine instead of twelve Plums in a dish, would have just won the first prize. The Grapes and Melons in Mr. Pratt's collection were very superior. For a collection of six varieties Mr. Child was first, Lord Wantage second, and Mr. Siddall third; and with four dishes Mr. Arkell, gardener to A. J. Shinner, Esq., was first, Mrs. Groves second, and Mr. A. James, gardener to the Rev. A. Coventry, third, all staging creditably. The prizes for Grapes were much too low. For instance, the first prize for six bunches of black Grapes in two varieties was only £1, and the least that ought to he done in the future is to double that sum and reduce the number of bunches to four. With greater liberality in this direction the Cheltenham Autumn Show would be one of the most noted in the country. Mr. C. Froud, gardener to the Rev. Canon Coventry, was placed first in all four classes for Grapes, and prizes were also taken by Mr. A. James, gardener to the Rev. G. Coventry, Mr. J. Dawes, Mr. Mackie, and Mr. E. Green, gardener to Major Bertie Roberts. There were also well-filled classes for Apples, Pears, Peaches, Nectarines, Melons, and other fruits, most of the prizewinners heing found among the names already given. Altogether a capital show of fruit was on view.

Vegetables are always exceptionally well shown at Cheltenham, the competition in the classes for collections and also for single dishes being very keen and close. Mr. Arkell was first for a collection of nine dishes, and was remarkably successful in various other classes. Several prizes were also won hy Mr. J. Turk, Mr. A. James, Mr. Tiley, Mr. J. G. Kitching, Mr. A. Cook, Mr. T. Evry, and Mr. Child. There was good competition for the special prizes offered by Messrs. Webh & Sons, Wordsley, for a collection of six varieties, Mr. Arkell taking the lead with very fine examples, among which some of Messrs. Webb's novelties were very prominent. Mr. T. Evry was second, and Mr. A. James third. For Messrs. Sutton & Sons' prizes the competition was equally good, Mr. Arkell again being first, Mr. Child second, Mr. Wonson third, and Mr. J. G. Kitching fourth.

GLASGOW AND WEST OF SCOTLAND.

The autumn Show of this Society was held within the International Exhibition Grounds on the 12th, 13th, and 14th inst. Plants and fruit completely filled the grand hall, two large marquees erected in the grounds heing devoted to cut flowers and vegetables. The entries were so numerous that a considerable number had to be put on tables in the open air. It is safe to say that no finer display has been seen in Glasgow since the "International" about sixteen years ago; indeed the Show was so large that it is only practicahle to report the prizewinners in the open classes. The platform was decorated by Mr. R. Bullen, Curator, Royal Botanic Gardens, and was done admirahly. Grand specimen Palms formed the background of the hank, finishing off at the lower part with Adiantums in perfect condition. An Orchid in the centre of this group, Lissochilus giganteus, attracted much attention, this being the second time it has flowered in Europe, a specimen in the possession of Sir Trevor Lawrence flowering last year for the first time. At the opposite end of the hall, and surrounding the Royal Throne, Messrs. Little & Ballantyne, Carlisle, had a collection of Crotons and other fine-foliaged plants, grandly coloured specimens of C. Williamsi, C. Queen Victoria, C. Warreni, C. Disraeli, interspersed with nice plants of Asparagus plumosus—a charming arrangement that will not readily be forgotten. Messrs. Wylie & Lochhead kindly granted the use of this portion of the hall, and were well rewarded, as it was one of the most interesting features of the Exhibition. A large table of flowering plants and Ferns were on exhibition from Messrs. Smith & Simon. Messrs. Austin & McAslan contributed a similar table, as also a capital collection of Apples from their new nurseries at Catheart; both collections were very highly commended. Mr. Wm. Kidd, gardener to R. B. White, Esq., Ardarroch, Garelochhead, exhibited a fine stand of Allamanda blooms and a heautiful stand of Orchids, including some finely coloured Cattleyas—C. Gaskelliana, C. speciosissima, and C. Loddigiesi. Lælia elegans preciata was very conspicuous, the lahellum being very richly marked. Among other fine plants were Cypripedium Spicerianum, Miltonia spectabilis, and Odontoglossums, a very highly commended exhibit. An observatory hive, showing bees at work, came from Wm. & J. D. McNally, Glenluce.

Plants (open to all).—With a group of plants arranged for effect, space about 300 square feet, Messrs. J. & R. Thyne won the first prize with a tasteful arrangement. The only other competitor in this class was Mr. Jas. Bryson, nurseryman, Helensburgh. A more spirited competition took place for the ten specimen plants, six foliage and four in flower. Mr. Jno. Sutherland, Victoria Nursery, Lenzie, secured the first position. Among his best plants were Davallia Mooreana, 7 feet through, a magnificent plant; Croton Chelsoni, finely coloured; Erica Marnockiana, Kentias Canterburyana and Fosteriana, and a grand plant of Gleichenia flabellata. Mr. R. Grossart, Oswald Gardens, Edinburgh, was second; his plants were smaller, but very fresh. Davallia fijiensis plumosa was very fine; Erica retorta major, Anthurium Knighti, and Kentia Fosteriana were also very good. Mr. Paton, Kilmarnock, had the third prize, his best plant being a huge specimen of Cycas revoluta.

For six stove or greenhouse plants in flower Mr. Hugh Millar, gardener, Auchinraith, Bothwell, was first; a magnificent Phœnocoma was his best plant. Mr. Raeside was first with six fine-foliage plants, Mr. Geo. Neil, Greenhead Street, Newmilns, first for the best six exotic Ferns, and the same for three Ericas. Mr. Jno. Mathieson, gardener to J. L. Henderson, Esq., Westbank, Partick, had the best Palm. Mr. D. Wilson, gardener to Hugh Steven, Esq., Westmount, was again successful in carrying off the first prize for three Orchids, a good plant of Oncidium macranthum and two Odontoglossums, Alexandræ and odoratum. Mr. John Sutherland had the best six Pitcher Plants, N. sanguinea, N. Lawreneeana, and N. Henryana being his best plants. For twelve table plants, foliage, Mr. Jno. McIntyre, Woodside Gardens, Darlington, was first with an exceptionally fine lot, Mr. R. Grossart

being first for six table plants in flower, and Mr. James Bryson first for six table plants, distinct varieties.

TABLE DECORATIONS.—The best decorated dessert table brought out five competitors. As the flower glasses and epergnes were mostly on loan from the exhibitors in the "International" the effect of the tables was very much enhanced, these being all of the most costly description. The first prize was awarded to Mr. D. McIntyre, late gardener to C. W. Cayzer, Esq., Mansfield Street, Glasgow. The centre of the table was crowded and the flowers somewhat coarse. The second prize went to Messrs. McDougall & Sons, Buchanan Street; the arrangement was lighter with the exception of the centre stand, Messrs. J. & R. Thyne, St. Vincent Street, being third with an exceedingly beautiful arrangement. Orchids and Roses were the only flowers employed, relieved with the green of Asparagus plumosus. Large dinner knives had unwittingly been laid down, which competely marred the superiority of the table in other respects.

CUT FLOWERS AND BOUQUETS (open to all).--Twenty-four Dahlias, distinct varieties, the first prize went to Mr. W. Boston, Bedale; Mr. Nicholas Walker being second, and Mr. M. Campbell third. For twelve bunches of single Dahlias, Mr. N. Walker, florist, Gateshead, Low Fell, was first; Messrs. Laird & Sons, nurserymen, Edinburgh, second; and Mr. Campbell, nurseryman, Blantyre, third. Messrs. Alex. Kerr & Sons, Katemouth, Roxburgh, were first for six spikes of Hollyhocks, and first for six blooms. The spikes reminded us of exhibits twenty years ago, when the Hollyhock was shown to perfection. Gladioli were well shown by Messrs. McGredy and Messrs. A. Dickson & Sons, who were first and second in the order named, Mr. N. Walker being third. With twenty-four blooms of Roses Messrs. James Cocker and Sons, Aberdeen were easily victorious; Messrs. D. & W. Croll, Broughty Ferry, second; Messrs. Alex. Dickson & Sons third. Mr. John Sutherland, Victoria Nursery, Lenzie, was successful in carrying off the first prize for twenty-four blooms of Show Pansies, distinct, and also for twenty-four blooms of Fancy varieties. Messrs. M. Campbell and A. Lister were second and third for the Fancies, Mr. Alex. Ollar, Campeltown, being second for the Show Pansies. Carnations and Picotees made a grand display. The first prize was gained by Mr. W. Campbell, Blantyre, with twenty-four blooms of very superior merit, Mr. N. Walker, Gateshead, being second; Messrs. Aitken & Sons, Lenzie, third. Messrs. Perkins and Sons, Warwick Road, Coventry, were successful in the bouquet classes, taking first for a basket of assorted flowers, hand bouquet and bridal bouquet.

FRUIT (open to all).—Sixteen dishes of fruit, not more than four dishes of Grapes, distinct, Mr. Thos. Boyd, Callander Park Gardens, Falkirk, was first with a grand collection. His Grapes were in splendid condition, good bunches, and perfect in bloom; especially noteworthy in the collection were three bunches of Alnwick Seedling, three bunches of Muscat Hamburgh, three of Black Hamburgh, and three of Black Alicante Grapes, Queen and Smooth Cayenne Pines, Barrington and Lord Palmerston Peaches. Mr. J. McIndoe, Hutton Park, Guisborough, had to be content with second place, and Mr. J. McIntyre, Woodside, Darlington, third. Mr. M'Kelvie, Broxmouth Park, Dunbar, carried off the first prize for eight dishes of fruit, Pine Apples excluded, Shipley Apricot, very fine: Late Admirable Peach, Brown Turkey Figs, Kirke's Plums, Humboldt Nectarine, Best of All Melon, Alnwick Seedling and Muscat of Alexandria Grapes. Mr. P. W. Fairgrieve, Dunkeld, was second, and Mr. Donald McBean, Craigends, third. The leading prize for six dishes of hardy fruit was gained by Mr. P. W. Fairgrieve with grand dishes of Elruge Nectarines, large early Apricot, and Pond's Seedling Plum, &c. Mr. Brown, Abercairney Gardens, Crieff, was second, and Mr. A. Wilson, Auchineruive Gardens, Ayr, third.

Grapes, eight bunches, at least four dishes distinct varieties, Mr. Geo. M'Kinnon, Melville Castle Gardens, Lasswade, was first with grand bunches of Black Alicante, Muscat of Alexandria, Gros Maroc, and Alnwick Seedling. Mr. M'Kelvie second; Mr. W. Murray, Parkhall Gardens, Polmont, third. Mr. M'Hattie, Newbattle Abbey Gardens, Dalkeith, had first prizes for two bunches of Black Hamburgh Grapes, two bunches of black Grapes any other variety, and two bunches of white Muscat Grapes, and twelve Figs. Mr. M'Kinnon, Melville, was also first for two bunches of Alicante, and for two bunches of white Grapes other than Muscat. Mr. W. Murray, Polmont, was first for two bunches of Gros Colman; the same exhibitor had the heaviest bunch of Grapes, Trebbiano, which was marked 19½ lbs. weight.

Mr. R. Grossart, Oswald Gardens, Edinburgh, had the best Queen Pine Apple. For any other variety, Mr. McIntyre, The Glen Gardens, Innerleithen, had the first place. Mr. McIndoe was very successful with single dishes of fruit, taking first prizes for the following—viz., one Melon, green-fleshed; twelve Peaches, six Apricots, twelve Plums, Gages; twelve Pears, three varieties, grown under glass; twelve Apples, three varieties, grown under glass. Mr. A. Wilson, Auchencruive Gardens, Ayr, was first with six Peaches, twelve dessert Apples, three varieties, grown in the open air, and twelve Plums, yellow, other than Gages. Mr. Walter Weir, Ackton, Wrexham, had the best scarlet-flesh Melon. For twelve Plums, red or purple, other than Gages, the first prize went to Mr. Geo. Gallacher, Kilkerran Gardens, Maybole. Mr. Hugh McDerment, Alva House Gardens, was the first with twelve Jargonelle Pears; Mr. Robt. Strathdee, Tarbolton, had the best twenty-four Apples, grown in the open air; and Mr. W. Boswell, 13, Albert Place, Stirling, had the best twelve kitchen Apples; and Mr. S. W. Fairgrieve, Dunkeld, the best dish of fifty Cherries. Mr. James Day, Galloway House, Garlieston, staged the best twelve Pears grown in the open air.

VEGETABLES (open to all).—For twelve Tomatoes, Mr. J. McIndoe, Hutton Hall, was first; Mr. Jas. Bryson, nurseryman, Helensburgh, second; and Mr. Jas. Brown, Abercairney, Creiff, third. A most spirited competition took place for the collection of vegetables, but our western champion, Mr. Donald McBean, Craigends Gardens, Johnstone, held his own. Very notable in his grand collection were Celery, Leeks, Carrots, and Beet. Mr. W. J. Low, Viewforth Gardens, Stirling, was a good second; his Onions were particularly fine, so was his Cauliflower and French Beans. Mr. Thos. Hogg, Aitkenhead Gardens, was third.

MISCELLANEOUS EXHIBITS.—A very grand display was made by nurserymen of cut flowers and vegetables of their own strains. Messrs. Dobbie & Co. of Rothesay had a large collection, the African and French Marigolds being large, of fine quality, and very highly commended. Messrs. Jas. Cocker & Sons, Aberdeen, had a magnificent collection of Roses and herbaceous cut flowers, neatly set up and all named, well deserving the highest commendation. Mr. M. Campbell, nurseryman, Blantyre, had a splendid display of Dahlias, Pansies, Begonias, and Carnations, the collection being very highly commended. Mr. Alexander Lister, Rothesay, was very highly commended for a choice collection of Pansies, a seedling named Robt. Craw receiving a first-class certificate; it has had four previous to this during the season. Pentstemons were particularly fine in this exhibit, as were also Antirrhinums, Marigolds, Dahlias, Asters, and Gladioli. The same gentleman also had a number of fine Leeks named Lister's Nonesuch, a variety that has secured many first prizes. Mr. Hugh Dickson, Belfast, had a grand collection of Roses, forty-eight trusses, tastefully set up and much admired, well deserving the highest commendation. Messrs. Sam. McGredy & Sons, Portadown, had a good stand of Roses, single blooms, very highly commended. Messrs. Laing & Mather, Kelso, had a first-class certificate for Carnation R. H. Elliot. Messrs. Munro & Ferguson Abercorn Nursery, Edinburgh, had a similar award for Matricaria inodora fl. pl. (Snowflake). Mr. Johnstone, Renfrew, had a large exhibit of horticultural baskets, teakwood and pitchpine stakes, plant tubs, &c., all well finished, very highly commended.

During the three days the Show must have been seen by over a hundred thousand persons. The Duke of Cambridge honoured it with a visit on Friday. Mr. F. Gibb Dougall, the energetic Secretary of the Society, admirably discharged the very onerous duties of managing so large an Exhibition. A member of the Executive of the International Exhibition, Mr. McLellan, the much-respected Superintendent, took a warm interest in the Show. The marquees were erected in a lovely corner of the park surrounded by shrubs and flower beds. Mr. McLellan is entitled to the thanks of the Society and its patrons for this kindness.—KELVINGROVE.



HARDY FRUIT GARDEN.

LATE PRUNING.—In many instances little or no stopping or summer pruning has been given the wall trees, while in other cases extra early stopping has been followed by a strong second growth. To leave all these shoots on the trees till the winter is simply to allow so much of the trees to be wasted, as well as to hinder the ripening of the wood and the formation of strong fruit buds. Only those shoots required for furnishing unoccupied wall space should be reserved and the rest be spurred back to within three or four joints of their starting point, deferring the final pruning till after the foliage has fallen. Closely pruned even at this late date, there is a tendency in the case of healthy trees to either break afresh or else to form wood buds rather than fruit buds. This applies only to Pears, Plums, all Cherries other than Morellos, and Apples. All reserved or leading growths should be carefully laid in to their full length, as they can better be done now than in the winter, and besides loose branches are unsightly and may be blown off at any time. Morellos will fruit next season on the young wood formed this year, but this being of a pliable nature need not be laid in till the trees are pruned and nailed next winter.

APRICOTS.—These are very late in ripening, and only in the sunniest positions will the wood mature well. In very wet and dull seasons fixed glass copings, or a glass covering of some kind, are of good service in warding off heavy rains, and they also materially assist in forwarding both the crops and the wood. During the average summers more harm than good results from leaving a covering over the trees, but those who have not removed the glass from their copings this season will in all probability detect to an inch how far down the trees are benefited by it. That portion that has been assisted during both the growing and ripening period by the extra heat retained under the glass may be found abundantly furnished with fruit buds, while the lower half or rather more may be almost devoid of bloom. Such has been the case in former years, and, judging by the present state of the trees, will undoubtedly happen again. Where strong yet not very sappy growths can be laid in to their full length, these should be retained, and if they do fruit next season will be the means of putting new life into the trees. The finest fruit is produced on young wood, and this should, where possible, replace

the old wood with its knotted spurs. Stop all foreright shoots and those not required for furnishing wall space to a length of about 5 inches.

PEACHES AND NECTARINES.—It is very doubtful if the later varieties will ripen their fruit properly, these appearing to be very much farther out of their average period of ripening than were the earliest varieties. Hales' Early has stood out conspicuously, handsome dishes being available by the third week in August. Waterloo, Early Alexander, and Early York have also given good crops of well-coloured and fairly richly flavoured fruit, but Bellegarde, Barrington, and Grosse Mignonne are quite hard as yet. Nectarines generally are late and much disfigured by rains. Hunt's Tawny, Stanwick Elruge, and Balgowan are the best for open walls. Owing to the injury done to the young foliage by cold winds in the early part of the season the growth was much checked, and much of it cannot possibly ripen properly. It ought to be freely thinned, a few well-ripened shoots being much preferable to a greater number not well ripened in consequence of being crowded. The reserved shoots should be laid in to their full length, and in addition to getting the full benefit of the heat from the walls will also admit all the sunshine we may be favoured with to the ripening fruit.

RASPBERRIES.—These have made very strong canes this season, and many more than are needed. All the old canes ought to be cut out and the young ones freely thinned, and this will enable those retained for fruiting next season to ripen properly. Autumn-fruiting varieties are very late, and unless the bearing wood is kept well thinned the fruit will be unusually sour and watery.

FRUIT FORCING.

VINES.—*Midseason Houses.*—Vines from which the Grapes have been cleared should now be divested of their laterals down to the principal buds, which are to be retained for next year's fruiting, doing so, however, without injury to the old leaves, as upon their preservation depends the maturation of the buds, which should be plump and well ripened. Vines that have not as yet borne fruit may be treated in a similar manner, so as to secure by full exposure to light the hardening of the wood. A free circulation of air is necessary, and in the case of young Vines, or where there is the least doubt about the thorough ripening of the canes, fire heat should be employed. When the laterals have been removed the old mulching, if any, should be cleared off the borders, and a top-dressing given of turfy loam, with about a fifth of horse droppings and a sprinkling of half-inch bones, or preferably steamed crushed bones. If the roots have not penetrated the mulching remove the soil down to them, and add fresh compost. In the case of inside borders afford a moderate mulching, and allow those outside to have the benefit of October rains, and instead of adding manure to the loam mulch the surface with 3 or 4 inches of fresh horse droppings, covering with dry litter or bracken by the end of October or early November. In the case of borders only partly made a breadth of 2 feet may be added to the front, choosing a dry day for the operation, mulching with horse manure and covering as before advised. Every attention must be given to young Vines planted this spring or early summer, keeping the foliage clean, removing all laterals, and maintaining a warm well ventilated atmosphere until the canes are thoroughly ripe.

Late Houses.—The Grapes in these ought now to be fully ripe, but if not continue sharp firing, accompanied with a rather free circulation of air where there are Muscats and other late Grapes until the latter are ripe and thoroughly finished, when a gradual reduction of temperature must take place, otherwise the fruit will shrivel, a state of things that must be guarded against by not allowing the borders, especially inside, to become too dry. Outside borders will in most instances be quite moist enough, and should be covered with lights preferably, or some other means employed to throw off heavy rains.

Ripe Grapes.—Hamburghs and other descriptions of thin-skinned Grapes require frequent examination for the removal of decayed berries, damp being their greatest enemy. It should be prevented as much as possible by fire heat in the daytime, accompanied by free ventilation, allowing the apparatus to cool down before nightfall, as brisk night firing is not advisable.

Vines for Early Forcing.—There must not be any further delay in the pruning of Vines intended to ripen their fruit by the end of April or early in May. Vines in pots intended for early forcing must be pruned forthwith. Shorten them to 6 to 8 feet, and prune the side shoots closely. To prevent bleeding, dress the cuts with Thomson's styptic or patent knotting.

FIGS.—Fig trees in pots which are subjected to early forcing should have the roots examined, and if it is not advisable to increase the pot room, remove a few inches of soil from the base of the ball, cutting back the roots, and give fresh fibrous loam, adding about a sixth of old mortar rubbish and a sprinkling of crushed bones, good drainage being provided. Remove the loose surface soil, and use the above compost in its stead, adding a fourth of well decomposed manure. Afford a good watering, and place the trees where they can have plenty of air, with shelter from heavy rains and frost.

Fig trees planted out should be kept drier at the roots, but avoid extreme dryness, a drier condition of the atmosphere also tending to promote the perfecting of the growths. As soon as the second crop in the latest house is all gathered the trees should be kept drier at the roots, and the house well ventilated in favourable weather. Any root-pruning or partial lifting should be done when the leaves show indications of falling.

KITCHEN GARDEN.

VEGETABLES AND THE WEATHER.—There is now every prospect of winter vegetables being in good condition, and growers ought to take advantage of the fine weather to see that their crops are in no way shaded by being grown too close or infested with weeds. Last winter vegetables suffered greatly; they were very scarce long before the spring crops were ready, and the failure of many crops may no doubt be attributed to shading and crowding in late autumn, when they should be fully exposed to the sun and air.

HARVESTING ONIONS.—All Onions should now be harvested. As a rule they are much smaller than usual this season, but this is no great fault, as small or medium-sized Onions usually keep better during the winter and into next summer than large ones. We have often divided our bulbs, storing the smaller for keeping and putting the large ones aside for immediate use. Dry the bulbs thoroughly; placing them under cover and sorting them afterwards will give employment on wet days. James's Keeping is still the best Onion for late use, and Bedfordshire Champion comes next to it, and care should be taken that these are not used before some of the earlier sorts.

PLANTING CABBAGE.—The July sown seed has produced plants that are ready for planting in permanent quarters. It is best to do this before they become crowded. We have planted some hundreds that are about 4 inches high. They appear small, but will grow very sturdy, and this is what is wanted for standing the winter and heading early in spring without bolting. Our spring Cabbages follow the summer Onions, for which the ground is well manured, and we do not manure again for the Cabbages. When the Onions are cleared off the surface is hoed and raked and the Cabbages planted without any further preparation. Drills about 3 inches deep are opened and the plants inserted in them at a distance of about 18 inches apart each way. The soil being very firm the plants make much more robust growth than if planted in recently manured loose ground. We draw the largest of the plants from the seed beds and plant them while the smaller ones are allowed to remain for successional planting.

EARTHING UP CELERY.—The main winter crop requires earthing up about this time. Celery takes upwards of a month to blanch, and sometimes more. Remove all small superfluous side leaves, tie the others together near the top, then apply the earth. Soil falling into the centre of the plants is ruinous to them. Break the soil on the ridges well, push it towards the plants with the spade, then place it close round each plant with the hands. This takes a little longer than pushing it in with the spade, but is all the better for the plants.

YOUNG CAULIFLOWER PLANTS.—Those intended to keep through the winter for planting out in spring for the first crop are nearly as large as the Cabbages. They are too close to remain in the seed bed, and the sooner they are transplanted the better. They must have a little protection in favourable localities, and a good deal in cold districts. It is, therefore, best to plant them in a frame or in a position where a frame can be put over them when severe weather comes. The soil in which they are planted should be moderately rich and very firm, and if the plants are inserted 3 or 4 inches apart they will have space to grow. If in frames keep them as close to the glass as possible, as if deep down they will be drawn, and many of them fail to produce proper heads in spring. We have wintered plants very successfully under handlights. They were transplanted in the squares about this time, but not covered until much later, as it is very important that the plants be kept hardy in autumn to bear the winter well.

LIFTING AND STORING POTATOES.—The fine weather has induced us to dig many Potatoes during the last week. We have lifted and stored several tons, and although below the average in size, they are not so badly diseased as we expected to find them. In light and medium soil they are remarkably free from disease, but in heavy soil at least half the crop is lost. The soil, however, is now very dry, and it falls away from the tubers so freely that there is no difficulty in seeing which are diseased and which are sound, and great care should be taken that the two are separated before storing. They must be quite dry, but if left in the sun too long they will be green and bitter. We store them in a dark place to which a little air is admitted.

PLANT HOUSES.

Medinilla magnifica.—Where this plant has been grown in the stove up to the present time, it should be removed to an intermediate temperature at once. The object is to prevent it starting again into growth. It should be fully exposed to the sun, and if possible a drier atmosphere maintained for it. Careful watering is necessary. This plant is very subject to thrips, which must be destroyed by a solution of tobacco water.

Softwooded Ericas.—With the present favourable change in the weather every attention must be paid to the watering of these plants. Be careful that they do not suffer by an insufficient supply of water at their roots, or early kinds, such as autumnalis, hyemalis, and others are certain to be blind. From the time the flowers are first formed until they show colour is the most critical period in the growth of Ericas. A check to the plants, whether by becoming dry or from any other cause, will bring about failure. The syringe may be freely used early in the afternoon of bright days. It will not be needed in the morning, for the lower night temperature to which they will be subjected while outside this month will insure them being heavily laden with dew in the morning. Water Epacrises with the same care, and fully expose them to full sunshine, for upon the ripened condition of their wood depends their flowering well.

Azaleas.—Early varieties generally ripen, although the plants may have been grown under Vines and Peach trees. The plants, however, will be greatly benefited if they are stood out for two or three weeks. Expose later varieties to full sunshine, and let them have abundance of air. They will ripen rapidly with sun during the day, followed by a low night temperature consequent upon leaving the ventilators open. Be careful they do not become dry, and syringe those under glass liberally twice daily in bright weather.

Camellias.—Be careful with those that are only just forming their flower buds. Maintain a drier atmosphere, and give no more water than is really necessary until it is certain the buds are swelling, when the plants may be treated more liberally in respect to moisture. The object is to prevent their starting into second growth. Earlier plants should be swelling their flower buds rapidly. These should have weak stimulants occasionally, and abundance of water at their roots. The syringe may also be used freely twice on fine days.

French and Fancy Pelargoniums.—All the early plants of these should, if not already done, be placed into 5-inch pots, their flowering size, using good loam, one-seventh of manure, and sand pressed firmly into the pots. They must not be over-watered or they will make growth too rapidly. Keep them on the dry side, give abundance of air, and the growth will be of the sturdiest description. Cuttings that were rooted together in pots and pans place singly in 2½-inch pots in the same compost, and grow them under the same conditions. Old plants shake out and place in smaller pots. They may be kept close for ten days or a fortnight afterwards, and then given the treatment advised above.

Calceolarias.—Transplant all that need it into pans and boxes before the seedlings become crowded. Earlier ones may be transferred from boxes into 3-inch pots. The earliest of all if ready may be placed in 5-inch pots, in which they will do very well until the close of the year, when they can be again shifted if large plants are needed. Late sown plants kept through the summer in a shady position have now four or five strong growths that have issued from the base. Remove a few of the lowest leaves from such, pot the plants deeply, and they will quickly root from the stems, then with good cultivation produce heads of bloom 3 feet in diameter.

Bulbs.—Pot and box quantities of Hyacinths, Narcissus, and Tulips at intervals of three weeks or a month until the end of October. It is not advisable to delay the potting of Hyacinths after the middle of that month; but Narcissus Grand Monarque and double Tulips may be retarded until the middle of the next month. These will yield flowers for cutting until June if they are kept in a frame with a northern aspect after they are removed from the plunging material and then placed outside where the sun will not reach them.

THE BEE-KEEPER.

THE CLOSING SEASON.

At last this abnormal and most disappointing season is nearing its end. We cannot in any way lament its dying moments. We rather rejoice that at last there is an end to our hopes instead of the continued and exasperating attempt to hope against hope for a change for better weather in order that a little surplus might be secured. After all, we do not think that there is any cause for the lugubrious comments which have appeared in some of the daily papers, pointing to a serious diminution in the number of stocks which will be found in health in the spring of next year. We are inclined to think that if proper attention is given to the wants of the apiary no great increase in mortality will be experienced during the next six months; but if ever there was a year when care was necessary it is in the present autumn, when failure to give the necessary attention must end in absolute disaster. "A Lanarkshire Bee-keeper" comments upon the great difficulty which has been experienced in this most untoward season in getting young queens fertilised, and in doing so he has struck a vein which we had purposed working in the present article, but which may now be passed over with the remark that one of the greatest dangers with which we shall have to contend in March and April will probably be due to the giving out of the powers of worn-out queens. Now to a great extent even this danger may be averted by those bee-keepers who keep a record of the age of their queens, and who are also able by an intelligent use of their powers of observation to perceive which queens are the more likely to be in health and power next spring. Our efforts must be concentrated upon the preservation of those stocks which possess valuable queens, and it would be also wise to save what would in other years be considered as practically worn-out mothers, in order that if any accident should happen to the younger queens at the head of our best stocks we may have a successor which may be able to perform the functions of a queen until some of our foremost colonies are strong enough to be devoted to queen-rearing.

There is another point upon which it may be well to touch. "A Hallamshire Bee-keeper," referring to the article on queen substitution in a past issue, comments upon the omission to furnish instructions for introducing queens. This was an intentional and premeditated omission, and for the following reason In the spring of the present year we discussed at some length the best means of introducing queens and gave some instructions accordingly. Upon these instructions appearing a most interesting discussion sprang up, and it was our intention during the past summer to have tested once more the several methods and then to have given the result of our further experience. This has been impossible, for the simple reason that the weather has been of a kind to warn even the most careless bee-keeper that the fewer the manipulations the better the chance for the stocks, and another reason has been the great difficulty of obtaining fertile queens and their more than ordinary value when they had been secured. It seemed, then, a wiser course to allow those who have given the question of "queen introduction" an amount of attention far greater than it has been in our power to do, to give the necessary instructions, than to instruct where we should ourselves like to have some further experience in view of the opinions expressed, when we did venture to offer an opinion which was based upon considerable practical experience in the apiary. For our own part we cannot conceive that a bee-keeper who really makes an earnest attempt can fail to introduce a queen provided he makes use of a "safe method," and this we should certainly advise every bee-keeper to do rather than run any risk with valuable queens.

It is possible that "A Hallamshire Bee keeper" failed to convey his exact meaning in the article to which we made allusion a few weeks ago, and to our comments on which he refers in the last week's issue, and we shall be glad if he will state more precisely what he did mean his readers to infer, in order that no suspicion of making fun of him may again be allowed to drop from our pen Of one thing we can assure him, and that is, that few know more of the practical difficulties with which inventors occasionally meet in the endeavour to reap the result of their ingenuity than we do ourselves—in one capacity or another—although we are inclined to think that some people attach a greater importance than it deserves to the piracy of inventions which is to some extent rife amongst us. Five shillings a piece for sections is a decidedly tall price, but if a bee-keeper can obtain it, why, he had better accept it. It is, however, in very few cases feasible to obtain so gigantic a price for a commodity which, although it may be scarce, is not by any means a necessity. Our sections are all sold, and at a price less than half that mentioned by "A Hallamshire Bee-keeper," and if we could rescind the sale to-day we should prefer to let things remain as they are, feeling satisfied that the purchaser has lost nothing by his purchase, and that we have lost nothing by the sale.—Felix.

TRADE CATALOGUES RECEIVED.

MM. Ketten frères, Rosiéristes, Luxembourg.—*Catalogue of Roses.*

Robert Veitch & Sons, Exeter.—*Catalogue of Dutch Bulbs and other Flower Roots.*

Thomas S. Ware, Tottenham.—*A B C Bulb Guide.*

J. Linden (International Horticultural Company), Parc Leopold, Brussels.—*Catalogue of Orchids and New General Plants.*

Benjamin Soddy, 243, Walworth Road, London.—*Catalogue of Hyacinths and other Dutch Bulbs.*

G. H. Krelage & Son, Haarlem, Holland.—*Catalogue of Dutch and other Flowering Bulbs and Plants.*

W. Piercy, 89, West Road, Forest Hill, London, E.C.—*Descriptive List of Early Chrysanthemums.*

C. Kerkvoorde, Wetteren, Belgium.—*Catalogue of Roses, Trees, and Flowers.*

Wm. Rumsey, Waltham Cross, N.—*Catalogue of Roses.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Recruiting Roses (*Herts*).—Mr. Bardney is not the man to forget his promise, and the notes you will see from him in another column were in type several days before you penned your letter.

Notes (*G. H., Lancashire*).—We are obliged by your communication, but the subject has been fully dealt with. We shall be glad to publish notes on the Potato crop, with the best methods of procedure where disease exists, and of storing the tubers.

White Begonias (*T. Smith*).—The two flowers of single white Tuberous Begonias you send are very good indeed. One is 5½ inches in diameter, of good substance; the other 3½ inches in diameter, stout in texture, and as circular as any Begonia flower we have seen. They are both worth preserving.

Variegated Sycamore (*John Carter*).—The leaves are distinctly and effectively variegated, some of them being from half to two-thirds creamy white, while a few only contain small specks of green. If the tree grows freely, and the variegation is constant, it would be decidedly ornamental in parks and plantations. We suspect, however, that few persons are better able to judge of its value and distinctness than yourself.

Greenhouse Plants Failing (*S. Williams*).—If no deleterious fumes find entrance to the greenhouse of your friend, the cause of the failure must be attributed to errors in ventilation or faults in cultivation; but without knowing the methods pursued it is obviously impossible for us to indicate, with any precision, the source of the evil. Too late morning ventilation is the cause of many failures in amateurs' greenhouses.

Floriferous Gladiolus (*W. B.*).—You are not very likely to see spikes like the one you have sent exhibited at the leading shows, as growers for exhibition would consider such defective. There is a slight fasciation of the stem, causing the flowers to appear almost in a bunch at the top of it. We have seen many similar, and though such spikes arrest attention though differing from the type, we can hold out no hope of your making a fortune by your seedling.

Stripping the Leaves off Pelargonium Cuttings (*A Youngster*).—There is reason in everything. To strip off all the leaves is a bad plan, and is therefore not practised by any good gardeners; at least, all we know worthy of the name only strip off the leaves from that part of the cutting to the extent of its insertion in the soil. Those leaves being the oldest are of least value from a rooting point of view, being more exhaustive of than contributing to the vigour of the cutting, and soon become sere if retained, hence are removed; but leaves on cuttings above the soil undoubtedly facilitate the rooting process.

Charitable Fund (*T. S.*).—We have considered your proposition, which is good in itself, and does credit to you as a sympathiser with distress. Much as we could wish all widows and orphans of gardeners provided for, this is at present impracticable, and with wider support accorded to existing institutions we are convinced more good can be done than by the project which you are quite justified in placing before us. The contributions to the Gardeners' Orphan Fund are as low as could be framed, and widows benefit as much as orphans do by this institution. These are also eligible for election as pensioners of the Gardeners' Royal Benevolent Institution.

Cuttings and Plants Damping (*G. Y.*).—Zonal Pelargonium cuttings are unusually succulent this year, and only the most exposed, firm-looking, short-jointed shoots should be chosen for cuttings; and these after being made may be left for the wounds to dry before insertion. Very gritty soil should be used, consisting chiefly of sandy loam with a free admixture of sifted lime rubbish and crushed charcoal. The soil being moist water will not be required for a few days, and when needed sufficient ought to be given to pass through the soil, light and frequent sprinklings being ruinous. If the earth is moist on the surface and dry below the cuttings are bound to decay. Abundance of light and air, with protection from rains, are essential at this season of the year. You should have given some particulars about the old plants, the position they occupy, and the treatment accorded them. You do not even say whether they are in pots or not. We are quite ready to give what information we can on your making the case clear that is at present obscure.

Worm-like Insects in Soil (*C. O. S.*).—These are small immature specimens of a species of centipede, probably Geophilus subterraneus. This and kindred species have occasioned much trouble to gardeners for some years past, their insidious habits making them difficult to extirpate. Free watering with lime water (clear) is good, as you suggest, and if the insects are detected on beds, the application during spring of lime, soot, and wood ashes, mixed in equal proportions. Some of our friends have lately tried petroleum, in the proportion of 1 oz. to a gallon of water, well agitating before application. A number of these centipedes may be trapped, at any stage of their growth, by burying in the earth slices of Potato and Carrot wrapped in a little hay or moss. A decoction of hellebore made by mixing 2 ozs. of the powder in boiling water to the consistency of cream, then stirring this in a gallon of water, is good. It is an excellent plan to bake infested soil for potting purposes, moistening previous to use. We only know of one garden in which this practice has failed, but there may be more.

The Oldest Apple (*Sextus*).—No doubt as you say there are differences of opinion on the subject. What "Dr. Hogg thinks about it" is conveyed in a note in his "Fruit Manual" in the following words:—"This is, I believe, the oldest existing English Apple on record. It is noticed as being cultivated in Norfolk as early as the year 1200,—what evidence against Mr. Knight's theory! In Blomefield's 'History of Norfolk' there is mention of a tenure in that county by petty serjeanty, and the payment of 200 Pearmains, and four hogsheads of cider of Pearmains into the Exchequer, at the Feast of St. Michael, yearly. It is the original of all the Pearmains, a name now applied to a great variety of Apples. Much doubt has existed as to the origin of this word. The early forms in which it was written were Pearemaine and Pearcmaine. In some early historical works of the same period I have seen Charlemagne written Charlemaine, the last portion of the word having the same termination as Pearemaine. Now, Charlemagne being derived from Carolus magnus there is every probability that Pearemaine is derived from Pyrus magnus. The signification, therefore, of Pearmain is the Great Pear Apple, in allusion, no doubt, to the varieties known by that name, bearing a resemblance to the form of a Pear."

Good Border Carnations (*A Sixteen-years Subscriber*).—The following are selected as of "good constitution and did not split their pods" this year in a collection of several thousands of plants in all the leading varieties grown by Mr. John Forbes at Dover House, Roehampton. Growers of these flowers are at liberty to supplement the list with other varieties they have found of "good constitution and do not split their pods." Here is the Dover House selection with the colours of the flowers. *White*: W. P. Milner, Virgo, Gloire de Nancy, Ossian, and Miss M. North. *Scarlet*: Brigadier and Illuminator. *Purple*: Walter Ware, Evelyn, Auctioneer, and Royal Purple. *Pink*: Gertrude Tegnier and Raby. *Rose*: Queen of the Roses and John Barnet. *Yellow*: Florence and King of the Yellows. *Purple Flakes*: Miss Mills, Ajax, James Douglas, and Squire Trew. *Scarlet Flakes*: Flirt and Dan Godfrey. *Rose Flakes*: Lovely Ann, Rose of Stapleton, and James Merryweather. *Scarlet Bizarres*: True Briton, Prince Albert, William Spoor, and Lord Wolverton. *Crimson Bizarres*: J. D. Hextall and Duke of Bedford. *Pink and Purple Bizarres*: James Taylor and Sarah Payne. *Fancy Varieties*: Lightbody's Seedling, Grandiflora, Sir B. Seymour, Goldfinder, and Alderman.

Arranging Conservatory (*Novice*).—The walls will look very tame covered with Ivy. We suggest that the most conspicuous be covered with ornamental rockwork to some little height from the floor, and above that have rockwork pockets for Ferns, ornamental leaved Begonias, Tradescantias, and similar plants, and cover the smooth portions of the walls with Ficus repens and var. minima. It is very close growing, forming a capital background to the Ferns, &c., and is better indoors than Ivy. Vines would not succeed in such house, nor are Roses suitable unless they are trained well up to the glass, and have plenty of light. We should have a border along the front inside, and plant Lapageria rosea and L. alba. They are charming when seen together, and would grow admirably in such position, training them up the front and over the roof from 6 to 9 inches from the glass. Camellias would do well, and Oranges may be grown in pots; but it would be best to rely chiefly on Palms and other foliage plants, such as Indiarubber, Aspidistra lurida variegata, Dracæna congesta, D. australis, Aralia Sieboldi and var. variegata, Phormium Veitchi, and P. Colensoi. For hanging baskets you could not have anything better than Ferns, such as Nephrolepis Bausei, Davallia fijiensis major, D. Mariesi, and Platycerium alcicorne majus.

Apricots under Glass (*J. S.*).—Where a wall 10 to 12 feet high exists with a south, south-west, or south-east aspect, it may be covered with a case of about 4 feet 6 inches in width, having a boarded front 18 inches high, with a board 9 inches wide hinged at the top and opening outwards the whole length for front ventilation. The top lights may be 2 feet 6 inches wide, and fixed at an angle or incline of two-thirds the width of the lights, which should be made to open the whole length. The slope of the front lights will be determined by the front and top

lights, and those may be fixed or not made to open, but they should be moveable, so as to admit of their being removed in autumn to ensure the trees rest until it is necessary to replace the sashes in the spring. The roof should be wired 6 to 8 inches from the glass, not more distantly than 4½ inches. The trees should be planted about 9 inches from the front inside, dwarf trained trees disposed 15 feet apart. In the absence of a wall a span-roofed house would be the most suitable, ends north and south, and may be made similar to that described for covering a wall; in fact, two lean-to's joined together with trees on both sides and a pathway up the centre. The chief requirements for Apricot culture under glass are a calcareous firm soil, efficient drainage, mulching and feeding, with cool treatment—*i.e.*, abundant ventilation, especially in the early stages and over the stoning period. If heat is used it should only be to the extent of securing the safety of the blossom and young fruit from spring frosts.

Vines Unsatisfactory (*W. C.*).—The leaves are thin in texture, spotted, and very pale in colour, which is chiefly caused by insufficient, injudicious, and inattention to early ventilation. Their present condition is not due to a cold close border, but to error in the treatment of the Vines generally. Your taking out the walk deeper than the border will help the drainage, which, however, seems unnecessary, as there is no "standing water." It seems you have made a border upon the site of, the old without removing the old Vine, therefore the concrete is over the old Vine roots, and it is practically sealed against nutrition. The young Vines, it seems, are not doing well, but if the border is properly made and the treatment good they ought to flourish. We are sorry to say we do not understand what it is you propose to do further with the border. If the border is formed as you describe—viz., "concreted, the bottom drained with plenty of stones and turves placed on them, then filled in with a mixture of turf, garden soil, stones, charcoal, and a little stable manure," it should grow good Grapes if these are drained with proper fall and outlet for the escape of superfluous water. If there is no provision for this how is a concreted border to be other than sodden? The disaster to the old Vine is mainly due to making the concreted border over its roots. Unless you can induce it to emit roots from the part of the stem above the concrete, it will not do any good. Had it been left alone and a departure made in pruning, and care taken to preserve the foliage from falling a prey to red spider, it would in all probability have gone on fruiting. It only needed more liberal treatment to insure a better result. In answer to your queries, first, "Would the foliage being spoiled cripple or weaken the Vines and so cause their not fruiting?" we answer, Yes; and second, as to what you have done and what you propose "to get fruit next season," so far as we can understand the case, we cannot assure you of success.

Ripe Nectarines (*Idem*).—Nectarines this year are much given to shrink or shrivel at the apex when ripening. This is probably due to the prolonged dull and wet weather which prevailed during their swelling and the bright weather following causing extreme evaporation from the fruit. Some Nectarines, though ripe and even shrivelled at the apex, are not ripe at the base or stalk. But why leave the fruit on the trees until it falls? When it is ripe, even before dead ripe, it should be carefully gathered.

Young Gardeners and the Journal (*C. D.*).—Your experience is similar to that of many other young gardeners who have been enabled to surmount difficulties through following the instructions given in our columns. There is scarcely a young gardener who enters on a charge who has not something to learn. Requirements may be different from those to which he has been accustomed, though he may be an able man all the same; and we are ready to help all who need hints for their guidance on their wants and means of meeting them being made clear. Like yourself, many readers find what they need without special inquiry; but it is a great mistake for any person who needs assistance on special matters to hesitate in asking for it, as by waiting for it to appear in the ordinary way he may wait too long. It is not in the slightest degree derogatory on the part of any person to seek for information that he needs, no matter how apparently simple the subject may be. Some of the greatest men in every profession or vocation are the greatest questioners. It is perhaps that habit which has helped to make them what they are, coupled with another of enormous importance, of sifting the chaff from the grain in the replies, retaining the latter only, casting the former to the winds. It is, we are glad to know, the custom of many young gardeners to "take the Journal" when they enter on a charge, and some of the most experienced gardeners in the kingdom, when they desire to see their young men prosper, advise them to read and study all they can, but not to omit these pages. You have no occasion whatever to apologise for the matter and style of your letter. It is well and correctly written. You must have been diligent in the laudable work of self-education, and with very little practice you may become a teacher of others through the medium to which you so frankly acknowledge your indebtedness. We are glad to receive your letter, and though you did not ask us to suppress your name and address, we do so, since you were, of necessity, unaware of the nature of the observations elicited. If you do not object we may perhaps publish your letter on a future occasion with your name, but have no desire to do so against your inclinations.

Dendrobiums and Cattleyas (*J. P.*).—Some Dendrobiums are deciduous and others evergreen. The former generally have their foliage on each side of the pseudo-bulbs, although some of the evergreen kinds are also of this mode of growth. Of the latter D. nobile and its varieties, as well as moschatum, may be taken as examples. In both cases these lose their foliage the second year, and when thoroughly ripened the first season the foliage gradually withers. Of such as Wardianum, crassinode, Devonianum, and heterocarpum, the latter flowers only on growths that are two years old, while the others flower on well ripened growths of the current year. The evergreen kinds generally have a few thick fleshy leaves on the top of their pseudo-bulbs. If you observe carefully you will see the young growths in many cases lengthen before they form roots to any extent, and if the old pseudo-bulbs are removed they are certain after the first year to decrease in size and strength. The young growths draw from the older the support they need until they have sufficient roots to support themselves. Several strong growers, such as Wardianum, practically use up the old growths in one year, and may with safety be removed during the resting period, or just before the plants come into flower. You will act wisely in leaving them attached to the plants until they shrivel naturally. Very frequently the evergreen varieties produce back growths, and thus increase the size of the plants. The growths last upon them for several years. The deciduous will bear during the resting period a much lower temperature than many of the evergreen varieties. The growths of Cattleyas must not be removed unless you wish to destroy the plants. The pseudo-bulbs and foliage will last upon them for several years. Healthy plants invariably produce growths from the back pseudo-bulbs. If they do not do this the rhizome may be partially cut through after flowering, which will induce the back eyes to come forward more quickly. When growths from these have well started, and they have rooted sufficiently to support themselves, the rhizomes may be severed. This is not absolutely necessary, for once the buds are produced they will annually increase in size and strength under good culture.

Wood-burrowing Caterpillar (*L.*).—Your Weeping Ash tree is infested with the caterpillar of the Wood Leopard moth (Zeuzera æsculi), but it attacks other trees more freely than the Chestnut (Æsculus), the Ash being one of them. As is recorded in Miss Ormerod's Manual the eggs are laid during July, or later in the summer, in crevices of the bark, and on the branches as well as the trunk of the trees; these eggs are oval and salmon coloured, and as many as 300 have been seen laid by one moth. The caterpillars, which soon hatch, feed at first in the bark, but not long afterwards they make their way into the live wood, where they bore galleries rather wider than themselves, and as much as a foot in length. When full grown they are about 1½ inch long, whitish or pale yellow, with a black horny plate on the segment behind the head and another above the tail; the other segments are spotted with black, and the head is black or has two black spots. They feed wholly or at intervals until May or June (statements are made that they live for two years), and, when full-fed, they spin a web, or form a case of wood dust, in which they change to an ochreous-brown, long, cylindrical chrysalis. This web is usually woven just inside the bark, near the entrance of the boring, so that when the time for development is come the chrysalis forces itself through the opening, and, by means of the fine prickles with which it is furnished along the back, it is held firmly in the web whilst the moth frees itself, and leaves the empty case projecting from the tree. The moth is large and handsome, with a white head; the wings are somewhat transparent, and are white with black spots, the spots being darkest on the fore wings; which also have yellow veins. The body between the wings is white spotted with black, and the abdomen grey, or grey banded with black. It is stated that the female moths appear somewhat later than the male, and may be found until the end of August. It is difficult and tedious to destroy the caterpillars. They may be destroyed by drawing them out of their burrows with hooked wires, or by running a strong wire into the hole, and thus crushing the caterpillar within to death. If the wire, when withdrawn, is found to have wet whitish matter on it, such as would result from having crushed the larva, or again, if gnawed wood should have been passed out of the burrow up to the time of the operation and no more appear afterwards, it may be supposed the creature is killed; otherwise the operation should be repeated. Syringing is also of service in getting rid of these caterpillars. For this purpose with a sharp-pointed nozzle fitted to the syringe, the hole may be filled with strong tobacco water and softsoap. The fumes of sulphur blown into the holes are also effective in destroying the caterpillars.

Names of Plants.—We only undertake to name species of plants not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*T. S.*).—1, Adiantum æmulum. 2, Adiantum Capillus-Veneris var. incisum. (*W. & J. B.*).—Tilia platyphyllos laciniata, a cut-leaved form of the Lime. (*H. H. C.*).—Several of the perennial Campanulas do not reproduce themselves true from seed. The varieties you send have probably no recognised names, and the specimens are quite insufficient for determining the point. We can only say, judging by the withering leaves alone, for there is not one flower, that No. 1 resembles C. urticæfolia, and No. 2 an inferior form of C. turbinata, of which seedlings are of most uncertain heights. You had, however, better regard them both as nondescripts. (*W., Bucks*).—The name of the Epidendrum has been confirmed, but the other flower did not afford sufficient material for determination. (*W. N. C.*).—1, Centaurea suaveolens; 2, Atriplex hortensis; 3, Colutea arborescens.

COVENT GARDEN MARKET.—September 19th.

Market quiet, with little alteration. Plums lower.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	0	to	3	0	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	0	0		0	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	0	0		0	0	Peaches, dozen	2	0		10	0
Currants (Red), ½ sieve	0	0		0	0	Pears, dozen	0	9		1	6
,, (Black), ½ sieve	0	0		0	0	Plums, ½ sieve	2	0		4	0
Grapes, per lb.	0	6		2	6	St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	2		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	7
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	1	0	to	2	0	Marguerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	2	0		3	0	Mignonette, 12 bunches	1	0		3	0
Asters, dozen bunches	2	0		4	0	Pansies, 12 bchs	1	0		3	0
,, French, per bunch	1	0		1	6	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	1	6		2	0	,, scarlet, 12 trusses	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pinks, various, 12 bunches	0	0		0	0
Calceolaria, 12 bunches	0	0		0	0	Polyanthus, 12 bunches	0	0		0	0
Camellias, 12 blooms	4	0		0	0	Pyrethrum, doz. bunches	2	0		4	0
Carnations, 12 blooms	0	6		1	0	Roses, Red, 12 blooms	0	6		1	0
,, 12 bunches	4	0		6	0	,, (outdoor), 12 bchs	2	0		6	0
Chrysanthemums, 12 bl.	1	0		4	0	,, (indoor), dozen	0	6		1	0
,, 12 bchs.	2	0		6	0	,, Tea, dozen	1	0		2	0
Cornflower, 12 bunches	1	0		3	0	,, yellow	2	0		4	0
Dahlias, 12 bunches	2	0		4	0	,, (Moss), 12 bunches	0	0		0	0
Daisies, 12 bunches	2	0		4	0	Stephanotis, 12 sprays	2	0		3	0
Eucharis, dozen	2	0		4	0	Stocks, 12 bunches	4	0		6	0
Gardenias, 12 blooms	1	6		4	0	Sweet Peas, dozen	2	0		4	0
Lapageria, 12 blooms	1	0		2	6	Sweet Sultan, 12 bunches	2	0		4	0
Lavender, 12 bunches	3	0		4	0	Tropæolum, 12 bunches	1	0		2	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tuberoses, 12 blooms	0	4		0	9
						Gladiolus, 12 sprays	0	6		1	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Foliage Plants, var., each	2	0	to	10	0
Arbor vitæ (golden) dozen	12	0		24	0	Fuchsia, dozen pots	3	0		6	0
Asters, 12 pots	3	0		6	0	Genista, per dozen	0	0		0	0
Balsams, per dozen	2	0		4	0	Heliotrope, dozen pots	3	0		6	0
Begonia, various, per doz.	4	0		9	0	Ivy Geranium	0	0		0	0
Calceolaria, per dozen	4	0		5	0	Hydrangea, dozen	6	0		12	0
Chrysanthemum, doz.	4	0		9	0	Lilium, various, doz. pots	12	0		21	0
Coleus, dozen	2	0		4	0	Marguerite Daisy, dozen	6	0		12	0
Crassula, dozen	8	0		12	0	Mignonette, per dozen	4	0		6	0
Dracæna terminalie, doz.	30	0		60	0	Musk, dozen pots	0	0		0	0
,, viridis, dozen	12	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	4	0		9	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0



HARVEST PROSPECTS.

Reports more or less positive, and certainly more or less speculative, as to harvest prospects are being published very frequently both in the daily papers and in the organs of the agricultural Press. Most of them point to a probable rise in the price of corn, and elaborate tables are given again and again in the attempts to prove certain conclusions by the aid of figures. Meanwhile farmers keep plodding on under difficulties which seem to increase rather than diminish under the depressing influence of cloudy skies and a wet summer, and corn stacks are springing up slowly very much in accordance with the prevalence of those "local showers" which have been predicted day after day in the weather forecasts; but writing on the third day of fine bright weather we feel hopeful that a bountiful corn crop may be saved in fair condition, and that after all the harvest of 1888 may not prove a failure.

Just at the beginning of harvest business took us within a few miles of the south coast; subsequently we have had to go north as far as the Highlands of Scotland. We have lost no opportunity in those journeys of seeing all we could of the crops and farming practice in every district we visited, and have, on the whole, just reason for saying that British farming is anything but a failing industry yet.

Perhaps the finest example of corn-growing in the world, certainly the best we have ever seen, is that which the Fen districts of North Cambridge and South Lincoln now afford. We are well within bounds in applying the term magnificent to the crops which we saw there ready for the reaper in the first week of the present month. In the fields where the corn was being cut the surface was crowded with sheaves. The yield of straw there will far exceed the average, and that of the corn too must be high. Well, since then we have been able in East Anglia to build nearly a score of huge Wheat stacks, and doubt not that the fenmen have missed no chance of doing all they could to save their bountiful crop of corn.

If farmers below the Trent cry out about a late season and a disastrous year, what may we expect to hear from Yorkshire, Durham, Northumberland, and the Lothians? For there many of the corn crops are still green, and farmers between 54° and 56° of latitude certainly need stout hearts to face the difficulties arising from such an adverse season. In Yorkshire and Durham we regret to see so much needless sub-division of farms, and strongly recommend estate agents there to do all they can to sweep away useless interior divisions. We know that sweeping reforms involving a heavy outlay are impracticable in districts where rents have fallen to such a nominal sum as has happened in some parts of Yorkshire. But no contrast can possibly be greater than that of many such farms and those which we saw north of the Tweed. "Why!" said an enthusiastic friend who was travelling with us, "every field is clean as a garden." He was right. However much hard times may press upon Scottish farmers it has caused no falling off in that high and finished system of cultivation for which they are deservedly famous. The land is kept free of weeds, and the whole of its fertility is absorbed by the legitimate crop. Some Barley and Wheat—most of the latter—may be seen in the Lothians, but it is Oats and root crops that are to be seen there in perfection, and it was undoubtedly a lively recollection of such crops that induced a certain canny Scotchman to advise farmers in East Anglia to substitute the culture of Oats for Wheat. His advice was untrustworthy, as he was quickly made to understand, but as the French say, "he had reason."

The Wheat, so far, has been got together without any serious amount of damage from sprouting, but very much of the grain is soft, and, though the stacks are built long and narrow, it will be some time before the grain is in the best order for threshing. Yet it will be advisable to wait, if any reliance is to be placed in published reports of the Wheat crop, for we are told the estimated production of Wheat in Europe falls short of that of last year by 21,000,000 quarters. Adding the estimated deficiency in the other principal Wheat-growing countries of the world, the produce of the present year comes out at 23,000,000 quarters less than that of last year. To all who can possibly afford to wait, every report or calculation we have seen clearly says, Do so. If you only grow four quarters an acre, waiting may mean 40s. an acre more to you from the Wheat, and that sum, in these critical times, may mark the difference between success and failure. To all farmers we say, Continue to give all possible care to the selection of pure seed of the best sorts, get your land clean and dry, store it with fertility, keep down weeds, and do all that is possible to bring and keep the land in the highest possible state of cultivation.

WORK ON THE HOME FARM.

Harvest work is still in hand, but fine settled weather has at length enabled us to push briskly on with it, and there is now a fair prospect of a speedy ending. Barley, though the grain is thick-skinned and much discoloured, is being carted quite ready for threshing, and the strong growth of Clover mingled with the straw will prove such excellent

fodder that some farmers assert it will be as valuable as the corn. Spring Oats ripen slowly and badly, corn so ripe as to be easily shaken out of the ear being visible among much that is still green and unripe. Winter Oats, on the contrary, were carted comparatively early, threshed, and the straw cut into chaff, so that we have ample store of sound wholesome food for the horses at harvest work. Green food alone is insufficient for them, for we have hilly fields where four horses are required for each waggonload of corn, and it is highly important that horses be kept in high condition now, as ploughing and Wheat-sowing must follow harvest work closely. Two or three days of bright sunshine and wind have hardened Wheat so much that the threshing machines are at work on it, and fair samples are being offered at market. This early corn-threshing is an outcome of dire necessity, and it has already caused a downward tendency in the price of Wheat. Farmers are so hard pressed for money that they are in many an instance obliged to realise what they can from farm produce as soon as possible. To home farmers who have to maintain a supply of flour from home-grown Wheat, we advise caution about threshing prematurely. Where Wheat was carted as it became dry between showers, the grain cannot be in a suitable condition for grinding for some months, and it is better to leave a certain quantity exposed long enough to ensure condition, even with some risk of sprouting. A common scarcity of straw has led to a little early Wheat-threshing, and the grain will be turned to account for sowing, otherwise it is as well to store enough sheaves in a barn to afford a supply of seed, and so avoid having to pull the stacks about for seed corn.

MAKING ENSILAGE.

We have received from Messrs. Eyre & Spottiswoode a pamphlet of fifty pages, published by them under the direction of the Ensilage Society. It is entitled a "Practical Guide for Making Ensilage," and appears to contain much information on the subject treated; also gives evidence of successful results. An extract from the first three pages will show the character of the work.

There is scarcely anything which grows on the farm which may not be made into ensilage. From Maize to Mangold tops, from Beans to Beetroot, from Tares to Thistles—the silo or the silage stack will receive all alike, and preserve as serviceable fodder. This, however, is not to say that the resultant fodder from these various crops is all alike. It differs necessarily as much as the crops differ. That which is put in comes out. If it be successfully ensiled it comes out but little different, either chemically or apparently, to what it went in. It follows, therefore, that the more valuable the crop, the more valuable the silage made from it.

All the graminaceous, leguminous, and cereal plants commonly cultivated are suitable for ensilage, and all have been successfully dealt with. The legumes have sometimes appeared to be a little more difficult to deal with than grasses or grain, but with ordinary care they may be made into valuable silage. In the return on ensilage made by the Agricultural Department of the Privy Council in 1885, it was remarked—"Meadow Grass, Clover, Trifolium, and aftermath appear to have been generally preferred for ensilage crops, but coarse herbage of all kinds, however uneatable it would be if made into hay, has been used to form ensilage. Oats, green Barley, Wheat, Maize, Buckwheat, Sainfoin, Rye, and other artificial Grasses, Vetches, Lucerne, Hop-bine, Mangold, and Turnip-tops, Peas, and Beans, with mowings of rough grass from plantations and orchards, hedge sides and ditches, together with Nettles, Sedges, and Rushes, have all been more or less successfully made into ensilage, and in that palatable form have been taken eagerly by stock." This utilisation of waste substances is in fact a salient feature of the ensilage system. In some circumstances it becomes an important part of farm economy. Fern, for instance, especially in Scotland, if it be cut sufficiently early, has been made into serviceable fodder in this way, and the same may be said of Hop-bine in the south.

The proper time of cutting the crops intended for ensilage is a highly important consideration. The object being to obtain a succulent food the plant should be cut not only in a living state, but when it contains all its natural moisture. To obtain this it is essential that the crop should not be permitted to get over-ripe when intended for ensilage. The following may be reckoned as the best stages at which to cut the crops named:—

Grasses and Clovers—as soon as they come into flower.

Tares or Vetches—when the corn begins to form in the pod.

Rye, Oats, and other cereals—when the corn is bursting into ear.

Before cutting the crop the preliminary question as to placing it in a silo or a stack must be settled. This must mainly be left to individual choice as influenced by local circumstances. Where a silo is already to hand we should unhesitatingly say—Fill it. Where no preparations have been made, the respective advantages will have to be weighed. On the side of the silo there is, in the first place, a minimum of waste. The provision also is a permanent one, and the silo, whatever its form, may be available for other uses when not occupied by ensilage. Forming part of the farm buildings it will probably be conveniently situated for feeding the ensilage to the stock. On the side of the stack there is, foremost, the question of cost. Under special conditions, and especially by the conversion of a barn or other building, a silo may be inexpensively obtained; but, as a rule, its first cost, whether it be built or excavated, is considerable. The stack avoids this outlay, though at the expense of some waste on its exposed sides. Another point in favour of the stack is that it may be erected on the field where the crop grew, and thus save the labour of carting green stuff any long distance—a very appreciable consideration. A point which may have weight with some is that "sweet" ensilage is more easily made in a stack than in a silo.

Supposing a silo is used it will be well to consider whether the stuff may not be chaffed with advantage before being pitted. Some of the most experienced ensilage makers consider that the advantage of chaffing far outweighs its cost. The stuff lies closer together in the silo, and is thus more easily compressed, while it is also very convenient in a chaffed state for feeding to stock and mixing with other foods. Of course, in the case of a stack, chaffing is impossible.

Supposing a stack to be decided upon, the farmer's first care will be to gauge roughly the probable amount of green fodder with which he has to deal. In estimating this he may calculate that a crop which would make 1½ ton of hay to the acre will make something like 5 or 6 tons of silage to the acre. To be on the safe side, for the present purpose, he will do well to take the higher figure. Supposing, therefore, that he has 10 acres, which he estimates at 1½ ton of hay to the acre, he would reckon that he would make a stack of 60 tons of silage. He would then decide whether he should make one or more stacks of his crops. Generally speaking, the larger the stack the better, inasmuch as the proportion of exposed surface is less. He will then choose the place or places which will be most convenient both for present stacking and for future cutting out. In most cases a situation in or adjacent to the field itself will probably be desirable, as the carting will be a less serious matter when the time comes for feeding the silage than it is at the time of stacking.

At this stage of the proceedings—if not earlier—a decision will have to be arrived at on the important subject of pressure. And here probably the tyro in ensilage-making will be perplexed. There is such a wide variety and large number of "methods," each of which has its special advocates, that in the multitude there is bewilderment. Nevertheless, though the details of ensilage-making differ, there are at the bottom of it certain principles which may well be borne in mind, and which, if borne in mind, will help the farmer either in choosing a method or arranging one of his own. It is very difficult to go far into this subject without traversing something which somebody believes; but nearly all experienced makers of ensilage will agree upon the following general principles as the basis of successful ensilage-making whether in silos or stacks:—

1, That the character of the silage depends upon temperature.
2, That the temperature depends upon pressure.
3, That in early stages pressure should be controllable.
4, That the pressure should never be taken off until the silage is used.

It will be observed that each of these requirements is completely met by the use of dead weight, which after all is the ideal form of pressure. Unfortunately, however, there are very often considerable difficulties in the way of the employment of dead weight. Where a silo is sunk in the ground there is probably no kind of pressure so economical as that of stones, bricks, or earth, and there is none which is more satisfactory in every respect. But in a built silo or on a stack the labour of lifting dead weight up and down is very considerable, and some mechanical means of applying pressure is probably in most cases preferable. This may be either one of several patent methods, or it may be arranged by the ingenuity of the farmer himself. On the whole we should recommend for a first attempt, unless—as aforesaid—it be in a sunk silo, the purchase of one of the well-tried systems of pressure, such as those which are associated with the names of Blunt, Johnson, Reynolds, or Wilson.

Inventor of Hay-drying Machine.—A correspondent reminds us that the address of Mr. Gibbs is Guilwell Park, Sewardstone Green, Chingford, Essex.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1888. September.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 9	30.209	55.4	51.5	N.	55.6	62.6	44.8	106.5	39.3	0.036
Monday..... 10	30.114	55.8	52.8	N.	54.7	61.3	44.0	95.5	38.0	0.061
Tuesday 11	30.304	53.5	50.4	W.	54.2	65.4	42.7	111.0	37.9	—
Wednesday.. 12	30.495	53.6	50.2	S.	54.2	67.1	43.8	107.0	39.2	—
Thursday.... 13	30.510	53.2	52.6	N.E.	54.8	66.3	44.3	104.9	37.1	—
Friday 14	30.274	59.3	57.0	N.E.	54.6	69.6	49.2	106.9	41.7	—
Saturday 15	30.172	54.7	54.3	N.E.	55.6	74.7	52.4	107.2	45.9	0.014
	30.297	55.1	52.7		54.8	66.4	45.9	105.6	39.9	0.141

REMARKS.

9th.—Dull early, heavy showers from 10 to 11 A.M., and showery till midday, fine evening frequent lightning from 8 to 10 P.M.
10th.—Frequent showers throughout, but occasional sunshine in afternoon.
11th.—Bright and fresh.
12th.—Bright and warm.
13th.—Foggy till 9 A.M., then bright with easterly wind.
14th.—Spots of rain early, bright warm day.
15th.—Generally bright and warm, but rather close; slight showers at night.

A fine pleasant week, with high barometric pressure, and temperature about the average.—G. J. SYMONS.

GUMMING IN FRUIT TREES.

CONTINUING this subject from page 258 last week, it may be noted that trees worked on hardier stocks have gum almost exclusively in the scion, the part below the junction of stock and scion being free from disease. This applies equally to standard or dwarf trees—*i.e.*, long stems or short stems of the stock; indeed the stock in most instances remains healthy after the tree above the junction has all but succumbed to gum. What is this evidence of? That the stock is hardy and healthy. If so, it is conclusive of the care exercised to procure stocks that will produce trees of the most desirable form in the least time. It is healthy, and in every way suitable as a stock for the purpose desired by a rearer of fruit trees for sale. That may be, but what of the bud? Is equal care taken that it be of a healthy kind? There is no, aud has been no gum on the tree from whence the bud is taken. If so, my objection ceases; but if the bud is taken from a tree that has been (if not then) affected with gum, it is, to say the least, tainted, and is predisposed and liable to exhibit the disease from inherent tendency sooner or later; indeed it only awaits certain climatic or cultural conditions to obtain in order to induce disease. The trees may not have gum so long as the effort is directed towards the production of wood, and the parts formed are annually cut away to an eye or two at the base on the hard pithless ripe wood. What if the trees are not transplanted so as to check the undue vigour that must result from the hard winter pruning? Gumming is certain, and not less so if the growths are retained instead of being lopped. It is when the vital forces are, or should be, directed to reproduction, that gumming appears. It may be on the current or the preceding year's wood, a present or a consequence of plethora, a deficiency of the power of elaboration and assimilation, resulting through the want of leafage to evaporate, or restraint of evaporation from deficiency of light and air, combined with excess of moisture, or directly caused by large reductions of foliage at a time as in disbudding, or allowing the growth to become crowded and then removing it by armfuls. But not to anticipate, let us keep to the young tree. It is in the nursery rows—a stout short-jointed tree, without a tendency to throw laterals from the shoots at some little distance from its origin, going its full length without lateral formation. It is not unduly strong—in no sense gross—its wood is firm, and its buds are prominent in the axils of the tree. It is a safe tree. Mark it. Reject the gross tree, and the weakly; the former is already plethoric, and the other is sure to become so when planted in soil such as is provided in culture. Of course there is a remedy; the gross tree may be lifted and cut hard back, and the weakly not given too rich soil, so as not to cause it to pass all at once from poverty to luxury. There is nothing, however, like the healthy tree to begin with, and if there is any trace of gum, or dead patches on the bark, the stock is unhealthy and only fit for burning.

How does the tendency of a tree to disease come? Budding on a stock fully a hundred times its strength, the aliment of a hundred parts being forced into it by the heading down process, it makes in a season as much growth as the stock required to effect on Nature's plan in three to six. It is the way to get a strong tree of a desired kind in little time. No question arises as to its being a ready means of transformiug a wilding into a useful tree, but is it not conducive to disease? If the stock when worked be gross it will transmit that grossness to the bud or scion, and I shall submit that grossness is the predisposing cause of gumming, induced in the maiden tree by the luxuriance of the stock. The stock may be hardy, which is sufficient to account for its immunity from gumming and the obstruction to the descending current by the junction tends to increased vigour of scion, so that it stores up more food than it otherwise would, and as a result earlier puberty ensues than would be the case were the stock allowed to follow Nature. The gross maiden tree is not so certain of forming fruitful parts as the moderately vigorous; the former has larger sap vessels, and as such is more liable to suffer from vicissitudes of climate, making a late growth, and the wood is not nearly so well ripened. It is liable to rupture of the sap vessels through their containing watery unassimilated sap in severe weather, showing evidence of injury before it is headed. It is plethoric as a maiden and never forms a healthy tree, for if lifted as a maiden the plethoric part—*i.e.*, the few inches of the first year's growth remain, and it is on that part that gumming appears in otherwise healthy trees, and to which they ultimately succumb. This is very common with Cherries—viz., gumming is most prevalent on the part immediately above the junction of stock and scion; it is common enough in Peaches, Apricots, and Plums, whole branches dying off from gumming at the point of origination, the result of error in the early stages of its existence. The stock being a means of acclimatising certain fruits it does not necessarily follow that plethora is certain to result in climates unfavourable to them, though we find trees outdoors are more subject to gum than those grown under glass, indeed we have evidence that trees against walls very much injured by gum were less so when enclosed in a glass case, and still further free from the malady when artificial heat was employed, as immunity or otherwise from this disease depends on the plethoric development in the first instance, the after weakness being a consequence of the disease. Roses that succumb to some disease akin to gum on the Briar are perfectly healthy on their own roots, and I have a Coe's Golden Drop Plum all but a skeleton through gumming, whilst the stock on which it had been worked is perfectly healthy, the stock being Green Gage, and fruiting freely.

The facts, therefore, on which we rest are—first, healthy stocks as the basis of immunity from disease, whether it be in the origination of new or the perpetuation of improved kinds, for by whatever means this is effected we have little to hope for but the perpetuation of disease in the progeny of a diseased parentage. The seed is no alleviation, as gumming is quite as pronounced in the stone of a Peach or Plum as in the branches, therefore rejection must be made of both when diseased as agents of reproduction. Second, the avoidance of what, through inducing overluxuriance, is calculated to and does predispose to disease. Third, keep from sudden checks to growth and their reaction.

In contending with the disease we have to make as sure as cultural judgment can of the cause or inducements. In the case of Peach and similar trees it may arise from looseness of soil, deficiency of calcareous matter, too rich humus-forming matter, defective drainage, whereby the soil is made sodden and sour, and too close and moist an atmosphere. Checks, such as injudicious ventilation when the external atmosphere is sharp and cold, extreme or full disbudding instead of little and often, large reduction of growths, and keeping the tender growths constantly wet in dull, cold periods. The remedy for looseness of soil is to firm it; for deficiency of calcareous matter is to supply chalk or marl, clay marl to light soil, siliceous marl to heavy; too rich or humus soil is to correct it with lime, or phosphates (mineral coprolites), or marl; inefficient drainage suggests rectification, and a close atmosphere will prompt freer ventilation. Checks by whatever caused have their remedy in a judicious pursuing of opposite treatment.

The best remedy against the disease is destruction of the affected parts, but which, strictly followed, would in many instances mean the destruction of the trees. What we insist upon is

that no tree be planted which at the time is affected with gum ; that it be uprooted if it show traces of gum on the stem or the main radiating branches near the stem ; and no tree be allowed to remain when the disease pervades the tree to a considerable extent. In cases of that description cure is hopeless ; therefore, our remarks on remedial measures are only intended to apply to trees affected which can have fresh parts originated from those that do not appear affected or derive sap through parts that are not diseased, as it is useless to seek other than mitigation if the disease has possession of the tree at its base.

Bearing in mind that the disease occurs most frequently and is greatly encouraged where the soil is too rich from over-manuring, too great width, depth, and freedom of rootage, and growth consequently over-luxuriant, we must seek a remedy in poorer soil, lifting, and root-pruning. It will not answer, however, to transfer a tree from a very rich soil to a very poor one at once, for the roots that are suited for the collection of food from a rich soil are not quickly adapted for the absorption of that from a very much less abundant pasturage. Restriction of the rooting area, especially of depth, and reducing the staple of the soil by removing some of it and admixing less fertile soil or chalk, is often of great service. It will in most instances suffice to add old mortar rubbish and road scrapings, and make the soil firm so as to induce stout, short-jointed, fruitful food. It gives time for thorough solidification, the supply of aliment being steady and not liable to influence by "fits and starts" to anything like the same extent by atmospheric conditions as that afforded by roots rioting in a loose, rich, deep soil out of all proportion in extent to the requirements of the tree's health, the power of evaporation and elaboration by the leaves, and assimilation in the buds and adjacent parts of the tree's structure. Lifting and replanting in rectified staple of soil is the only means by which gumming when induced by over-luxuriance can be rectified and prevented in cases where the cultivator has command more or less of the climate by means of glass and artificial heat ; and where the weather controls the cultivator's operations judicious lifting, root-pruning, and attention to soil influences will aid considerably in combat with the disease.

Removing the infested parts, cutting them clean away below the infection into sound wood, and at once burning them, is the surest way to prevent contagion, delay in this respect being a wholesale means of spreading the disease. Removing large branches at pruning time should be avoided ; indeed summer pruning should take the place of winter pruning, gross growths being restrained by stopping, or removed in order to an equal distribution of the sap, and insure an equality of medium and thoroughly solidified growth throughout the tree, and then we may look for health and fruitfulness.—G. Abbey.

PLANTING DAFFODILS.

There is perhaps no better month in the whole year for planting the majority of Daffodils and Narcissus than September, though some growers make a start even earlier. Such, however, are exceptions, and not the rule ; indeed private individuals have not the opportunity of procuring their bulbs much before this date, and all bulbs this year are exceptionally late in ripening. In the course of lifting some Daffodils during the present season I have witnessed several instances in which the new roots have been emitted while the foliage was still green, the result, no doubt, of the great rainfall. On the whole, this season, the ripening process has been irregular, and particularly was this so with the Tenby Daffodil, biflorus, ornatus, and the double Poet's Narciss. Judgment and forethought have been necessary, and the more so in heavy loamy soils, all of which has tended to a later harvest in the bulb trade than has been known for many years. The great downpour of rain has not, however, interfered in the least with the quality of the bulbs, but has produced them decidedly superior to seasons where a scorching sun is upon them before they are scarcely out of flower ; the process of ripening has been more gradual, with the result that the bulbs, when lifted and properly dried, have turned out excellent. With regard to lifting and storing them, I will only say that it is too late to attempt it if not already done, as many are already rooting freely that have not been disturbed, therefore to lift them and lose all their new roots would be a serious error. But now a few words as to planting them and their general cultivation.

Regarded collectively, the majority of Daffodils, and particularly the grand Trumpet varieties, which belong to the magni-coronatæ group, delight in a deep rich fertile loam, such as fresh turf from a pasture. In this they delight, though it is not forthcoming in a great many instances, and they have therefore to be planted in something else. They are by no means a fastidious group, however, as may be gleaned from the manner in which some thrive in cottage gardens that have not been disturbed for years, where they have grown into large masses, too crowded, it may be, to flower with their wonted freedom when under good cultivation ; for let it be borne in mind that while these cottage garden clumps appear to thrive, the number of flowers will be very small as compared with the number of bulbs. Like all other plants, Daffodils cannot grow to perfection when left alone. If one of these large clumps be examined, it is most likely there may be fifty or a hundred bulbs of all sizes heaped one on another, and probably not a dozen flowering bulbs in the whole. The case is quite different with Daffodils under cultivation, when single bulbs (I allude more particularly to the old double Daffodil) will produce three, four, and even five flowers each ; thus illustrating, on the one hand, the plant in a semi-wild condition, and on the other, the result of high-class cultivation. I mention these extremes to show that Daffodils, even when planted in shrubberies or semi-wild places, are much benefited by periodical lifting and separating.

The majority of Daffodils are very accommodating as to position, and may be planted in the herbaceous border proper, or fringing a plantation of Rhododendrons ; on grassy slopes ; in shady groves ; in the woodland or wild garden, or in fact any place out of doors where a fair depth of good soil may be given them. Not the least important feature in connection with many of them is their adaptability for forcing and for pot culture under glass. Only a few years ago the rich and varying tones of gold and yellow, which are now so much admired in these Daffodils in the early spring time, were considered vulgar, and as a gardener recently observed, in speaking of Daffodils as cut flowers, "We hardly dared to send them in the house with other cut flowers, and now they are all the rage." And so it is. Fashion and tastes quickly change, for who would have thought a few years ago that our common double Daffodil would ever become sufficiently popular and valuable that bouquets chiefly composed of them should figure prominently in leading West End florists' windows? Yet it is so, and extremely effective they are when arranged skilfully, and at the same time they are very enduring provided they have not been forced too hard. As pot plants in the conservatory or the drawing-room they are highly ornamental, and are being more eagerly sought after year by year.

But no matter for whatever purpose they are required, whether it be for pots or for the open, no time should now be lost in obtaining supplies and having them planted at once. For pot culture the best plan to adopt is that which most growers employ for Hyacinths, Tulips, and the like, covering with a few inches of cocoa-nut fibre refuse or coal ashes. In this they will be safe for eight weeks or thereabouts, by which time abundance of roots will be formed, when they may with safety be introduced into gentle heat. The only difference I would make with Daffodils for pot culture would be to bury them completely in planting, and not, as is the case with Hyacinths, leave the apex of the bulb above the surface. Daffodils when first introduced into heat need not occupy the stages ; they may be placed beneath them, provided they are not in contact with or even near the pipes, as that would mean a serious injury to their flowering. If left plunged in the ashes a longer time than I have stated some of the earlier ones may have commenced growth, in which case they should be shaded from full light for a few days. In planting them in the open ground they are not so easily accommodated, unless it be in instances where beds are devoted to them, when the planting is simple enough.

In all gardens where light sandy loam abounds Daffodils are easily accommodated, and may be planted from 4 to 6 inches deep for the larger bulbs, such as Empress and Emperor, Golden Spur, and spurius, while 2 or 3 inches deep will be ample for such as the Hoop Petticoat section and those generally of small stature. For the more delicate, such as cernuus, cernuus plenus, albicans, odorus plenus, pallidus præcox, nobilis, scoticus, and moschatus, a maximum depth of 3 inches will be sufficient ; in heavy, holding, and clayey soils further precautions will be necessary in the shape of abundance of sharp grit, burnt earth, and leaf soil to render the soil as open and light as possible. The stronger varieties do not object to heavy soils provided they are well drained, in which case they are benefited by abundance of sharp sandy grit, which is not so important on lighter soils.

Another important point is that of manure for Daffodils. This

us, however, a question which individuals must settle for themselves, depending as it does in its entirety on the condition of the soil. A rich fertile loam will grow Daffodils perfectly without manure of any kind, while a poor, hungry, or gravelly soil will be benefited by a good dressing of cow manure worked in 3 or 4 inches below the bulbs, or failing this a good soaking of liquid manure may be given with excellent results when the roots are most active—viz., from September to end of January. The idea of supplying liquid manure in winter to these and other bulbous plants has not received the attention its importanee deserves, and is probably overlooked at a season when rain or snow have made the ground sufficiently moist for most things; but not only is it highly beneficial to Daffodils and Narcissus, but to Liliums, Spanish and English Irises, tuberous Anemones, and, in fact, the majority of bulbous plants which make a quantity of fresh roots annually.

For anyone desiring a select series of Daffodils and Narcissus to form a start, I have given the names of some of the best and most useful: Corbularia conspicuus, the golden Hoop Petticoat; princeps, sulphur and yellow, good for forcing; nobilis, sulphur and yellow, trumpet reflexed and fringed; maximus, deep golden, a fine flower; obvallaris (Tenby Daffodils) the best forcing variety of single Daffodils; Telamonius plenus, the old double Daffodil, grand for forcing; spurius, spurius major, and coronatus, all excellent for a second early batch indoors; Golden Spur, a grand flower for any purpose; Emperor, the grandest of all its tribe, too valuable for forcing; Horsefieldi, an exquisite flower, will force steadily; Empress, a noble flower of great merit; rugilobus, a useful variety very free flowered; cernuus and its double form, moschatus, albicans, Wm. Goldring, cernuus pulcher, tortuosus, are all charming in the garden but not suited to growing in heated structures. Next I would name a choice kind which is always admired—viz., pallidus præcox, a pleasing sulphur shade and most useful; then in the Incomparabile group are Stella, Glow, Cynosure, Princess Mary, and Sir Watkin, each distinct and good. Barri conspicuus is remarkable for its large spreading perianth segments of sulphur and yellow, and cup stained with orange scarlet, this is exceedingly showy. To those named may be added poeticus ornatus, poeticus plenus, and the sulphur and orange Phœnix; poeticus ornatus is the best white forcing variety in cultivation, and its flowers by the tens of thousands find their way into Covent Garden Market from January to April inclusive.—J. H. E.

WINTER CUCUMBERS.

During the summer months Cucumbers can be grown in almost any structure with success, but this is not the case when a supply has to be maintained during the winter. The best of conveniences are essential to success. They cannot be satisfactorily grown with other plants beneath them as may be done during the more favourable months of the year. The structure for this purpose must be of the lightest description, with plenty of bottom and top heat at command. A temperature of from 60° to 70° at night must be maintained; with a rise of 5° by day at the least. This should be obtained without having to over-heat the pipes. Nothing is more detrimental to the well-being of these plants than making the pipes burning hot, as the foliage is certain to be attacked by red spider. If the temperature cannot be readily maintained without over-heating the pipes it is almost useless to attempt the culture of Cucumbers. Applications of insecticides and other strong measures would soon destroy them; in fact, if the syringe be used sufficiently frequently to keep the red spider in check would do more harm than good; the plants at the most trying period of the season would be certain to fail. Under any circumstances the temperature must be regulated by external conditions. When the weather proves severe the lowest named only should be maintained; in fact, if the thermometer reads 60° early in the morning and then rises it will be more suitable to the plants than a higher degree. On mild occasions, when it is 45° to 50° outside, the highest figures may be kept up with beneficial results to the plants. The supply of bottom heat is equally as important as the top, and should range from 75° to 80°, the same conditions being observed as advised for the top.

The manner in which the bottom heat is applied is also important. It is a great mistake to have the pipes any great depth below the base of the soil, and it is equally bad, if not worse, to have them arranged so that they unduly dry the soil. In the arrangement of a house for this purpose preference would be given to a plan whereby the pipes could be utilised for both top and bottom heat. They would not be confined, but slates half an inch thick, or nearly, would be laid practically on the top of them; in fact they would be arranged so that the flanges of the pipes were just clear. A clear space would be left near the outer walls of the house, 2 or 3 inches in width, or even the space of a 4-inch pipe. This insures the whole of the soil in which the plants are growing being of a uniform temperature. However much piping may be employed for bottom heat, if the soil is against the outer walls it is damp the whole season, and many degrees colder than that nearer the inner walls of the house. Such arrangements materially lower the temperature of the soil throughout, and have a very detrimental effect upon the plants. If the bottom heat pipes are enclosed within the bed the chamber for the pipes should be covered with earth, not filled in with rubble as too often is done. There should also be room between the outer wall and the wall of the bed for one or more top heat pipes. Slates absorb heat quickly, and it is imparted to the soil without having that drying effect which is the case when the pipes are merely covered with loose rubble. When a crating of dry material is formed over the rubble the heat fails to pass through to the soil above. If slates are used it is not wise to lay the soil directly upon them, for they hold water by this means to an extent that cannot fail to be serious. This evil is overcome by placing on the slates about 2 inches of drainage, which allows superfluous water to pass away readily.

There can be no doubt that a lean-to structure facing south, with a shed or other building behind it, is the best for winter Cucumbers, being much warmer than a span-roofed house in any position, although they can be grown in the latter if it runs north and south. If it runs east and west those on the south side may do well, while those on the north will not succeed. It is a general custom to arrange the wires upon which to train the plants 14 or 16 inches from the glass, thinking that the nearer to the glass they are the better. This is the case with those grown during the spring and summer, provided the foliage has room to develope itself. But for winter culture the case is different. The wires should be 20 inches from the glass, and it would be better for the plants if they were 2 feet away. The footstalks of the leaves are very liable to grow longer during the winter than when they can enjoy plenty of light and air during the summer. When planted at only the ordinary distance from the glass they are apt to crowd themselves against it and hold too much moisture. Another advantage, and the principal one, is that they are much warmer than when they are close to the glass, and not so liable to injury from cold.

Those who intend growing Cucumbers through the winter should plant the whole, or part of their early house, in June or the beginning of the next month, so that they can insure a supply of fruit until the end of November. Many winter Cucumbers fail towards the close of the year, or before, by cropping them too early in the season. Early cropping, whether the plants are intended for spring, summer, autumn, or winter, is one of the gravest mistakes. It is a general custom, and it is a very bad one, for it practically destroys the vigour of the plant for a long time. With winter Cucumbers this practice must be strictly avoided. The plants should cover a good portion of the trellis before they are allowed to fruit. If this is done, and the fruits that appear are removed until the middle of November, they will, with moderate cropping, afterwards yield a supply during the winter.

To give the plants every chance of doing well, sturdy plants in 5-inch pots must be placed out at once. If plants are not raised seed may be sown at once, but no attempt should be made to fruit them before the middle of December, but temporary plants may be placed amongst them to yield a few fruits until the others gain strength. For winter work the plants should not be placed nearer than 3 feet, and allowed to extend up the trellis about 4 feet before they are pinched. Every attention must be paid to them from the time they are planted, so that the growth they make is short-jointed and of the sturdiest description. This can be accomplished by ventilating liberally whenever the weather is fine. A moist close atmosphere that will encourage soft quick growth must be avoided from the first. If this is done they will attain considerable strength by the time the leader is pinched. The laterals should be removed to the lowest wire, and then allowed to extend until they meet, when the points of the shoots should be removed, the laterals being at least 16 inches apart, so that ample room will be left for training the sub-laterals on which the fruit is to be taken. It will be necessary, as these are laid in, to remove some of the main leaves to give the foliage of the sub-laterals room to develope. As a rule, they will show fruit at the first joint, and should be pinched one joint beyond, all the fruits being removed but one. Some of the sub-laterals will need removing to prevent crowding, and this is best done as soon as they start from the laterals. All growths afterwards may be pinched at the fruit, and not one joint beyond. By this means the wood can be removed from time to time as the fruit is cut, and thus afford ample room for fresh fruiting shoots. After the plants commence fruiting they must not be overcropped. If too many fruits show, remove them directly it can be ascertained that the required number will swell. It must be remembered that each fruit takes more than double the length of time to swell than is the case during genial weather. It is often necessary

during bad weather to fertilise the flowers, and if this takes place the strain upon the plants is very much increased.

The soil for winter Cucumbers is important. In the summer they are not particular, but in the winter the soil must be of such a nature as to avoid a quick soft growth. It should be composed chiefly, if not entirely, of good fibry loam. This depends upon its fertility. If it is rich it may be used alone ; if not, one-seventh of manure may be added. Some loams are poor, and such that we are in the habit of getting here must be enriched with manure for Cucumbers, both during the summer or winter. The soil must be well warmed before planting ; and here it may be mentioned that the structure used must be thoroughly cleaned. This is not only necessary at the commencement, but those residing in the neighbourhood of towns will find it requisite to wash the glass outside frequently. Winter Cucumbers do not need so much soil as might be given with safety during the spring or summer. Two bushels for each plant will be ample, with attention to top-dressing them from time to time as they need it. Frequent top-dressing is infinitely better for winter Cucumbers than having to resort to feeding. After the plants commence fruiting a little Clay's Fertiliser sprinkled on the surface of the soil will be found better than stimulants in a liquid state.

The amount of water needed during the winter is considerably less than during the more genial months of the year. They must be kept as near as possible in an intermediate condition. Great care must be exercised in this matter ; too much water is as detrimental as too little. Do not supply water at a lower temperature than that at which the bottom heat is maintained. The syringe may be used freely at first on all fine occasions, but it must be gradually discontinued, and may be needed only on bright days during the months of November and December. It is not difficult to keep plenty of moisture in the atmosphere during these months without reverting to the syringe, which one is often tempted to use after bright sunshine, but if it is not done early in the day, or is followed by sunless weather, the operation does more harm than good. The atmosphere can be kept moist by damping available spaces, but too much moisture in the atmosphere during the winter will soon prove as ruinous to the plants as cold. In an atmosphere overcharged with moisture the plants soon fail, they give very little warning ; first they flag under bright sunshine, and if they are examined the tissues will be found to be in a state of decay.

The house should be liberally ventilated at first to insure a sturdy growth, and as the season advances air must be admitted with great care and caution. No ventilation would be needed after the end of October if it was not for the condensed moisture that becomes deposited at night on the glass and wood of the house. A "chink" of ventilation early in the day quickly dispels the moisture that hangs about the woodwork, which is much better for the plants than being subjected to a constant drip throughout the greater part of the day. If the rafters are grooved, or even have a strip of zinc on them, this condensed moisture can be carried away without subjecting the plants to a shower bath daily. It is a good plan to supply the house with canvas blinds, which keep the house many degrees warmer, and prevent to a very large extent the condensation of moisture that would otherwise take place.

Telegraph, Cardiff Castle, and All The Year Round are good for winter growing. A cross between the first and Paragon results in a good useful variety for the winter. It is questionable if any surpass Telegraph for this purpose.—Wm. Bardney.

GLADIOLI NOTES.

Owing to shows and exhibiting thereat I had no time to note results during the past two or three weeks. In the first and second weeks of the month seven dozen spikes were cut and exhibited, beside quantities for home use. No particular note was made as to number of varieties, but the following were all in flower in larger or smaller numbers, besides sorts already noted, many of which still continue to open blooms, as for instance, Shakespeare, Opale, Horace Vernet, Carnation, and many others. One of the finest which has bloomed is Enchanteresse, of which I had two spikes open at once. This is the best light variety we have yet flowered, its only fault being a too close habit, so causing the very large flowers to become somewhat jammed on the spike. It is a variety requiring time to develope. Grand Rouge has given four fine spikes ; this is a good variety. Eugène Souchet, the first only opened a most beautiful deep rose and white ; a perfectly formed spike. Fra Diavolo is a very fine orange flower with pure yellow blotch, and of a lighter shade ; in the same way is Pyramide a very good sort. Flamboyant we have fine, a very bright variety, and making a telling spike. Africain is a dark slaty crimson, not so good as Tamerlane, which has longer spike and larger and brighter flowers. Ondine, a white and violet-flamed variety, is very fine this season. Orphée has also been good. A variety in the same was as Orphée, but later and just unfolding its blossoms here, is Teresita, a strong growing very good sort. Hesperide and Lady Bridport belong to same class, light ground with salmon flake, both free and pretty.

Leviathan has been very good, spikes long and flowers large. Daubenton is a lively lilac flower, a good variety, and making a good spike. Rayon d'Or, straw flaked with carmine, has yielded some good spikes, though rather short. Pactole is a better variety with longer spike but flowers not so large. Brennus, a bright lake with large white blotches, has been rather small ; a very bright sort. Amaranth, a flamed variety, has very large flowers, but rather dull. Ciceron, rather deeper in the shade but not so good a variety as above. Crépuscule, a very soft flamed lilac variety, is very good indeed. Macaulay is a very good large sort but rather loose. Other varieties are Zenobia, Madame Basseville, Madame Dombrain, Penelope, Grand Lilas, Parmentier, Sylvie, Baroness Burdett Coutts (a good deep lilac variety), Victor Jacquemont, Orange spotted, Octavie, Argus, Elvira, &c.

There are still a good few varieties to open, such as Amitié, Cameleon, Phœnix, Le Vesuve, &c., but even these late varieties may be flowered by this date, and earlier by allowing them a longer period under glass before planting out.

We have experienced since about the 12th of the present month a very beneficial change of weather, and the young corms I find are swelling up very fast. The earlier sorts will be ready to lift in the course of the next ten days, as nothing is gained by leaving the corms in the ground after the foliage has yellowed. Indeed a change to wet sometimes induces renewed root action in these early kinds, which cannot be otherwise than mischievous in its tendency. Careful growers do well to inspect the corms of such kinds as Ad. Courbet, Mons. Ad. Brongniart, Shakespeare, Horace Vernet, Albion, Opale, and others which have flowered a few weeks back, and lift them as soon as root action has ceased. Later kinds may be greatly helped by inserting a spade or fork underneath the plants, and giving them a slight upward heave. This will help the ripening process considerably. Any varieties of value which may appear to be too late to open this autumn should have the spikes removed in order to induce the plant to swell up the young corm instead of wasting its energies on the spike, which may in the end be too late to develope for cold.—B.

NOTES FROM A HERTS GARDEN.

Vegetable crops in 1888 have been and are plentiful and good. There have been as usual various degrees of excellence and imperfection in the different crops, therefore I shall be equally as careful in condemning the unsuccessful or in praising the satisfactory.

PEAS.

Early Crops.—Early in December, 1887, a first sowing was made of Veitch's Extra Early and Dickson's First and Best on a south border. The seed was wetted with petroleum just before sowing, the seed covered with soil lightly, and then an inch thickness of sifted ashes given as a further safeguard against mice and slugs. The soil is light and rich from repeated additions of opening material, working, and manuring. A sunny, sheltered spot had been used for early Peas, nobody knew how many years consecutively. The germination was not good. Something was wrong with the seed. Something preyed on the sprouts. The root stems were rusty, cankered. In result there was about half a crop ; in 1887 the crop was little better. Is the soil Pea-sick? The border was sown with Prickly Spinach early in August, 1887, in rows 18 inches apart, every third row being left out for the Peas. The Spinach was all that could be desired, and now, after the Peas of this year, there is Snow's Winter Broccoli as sturdy and as blue-green as the most fastidious could desire.

A sowing made in pots under glass in February of Veitch's Extra Early, hardened off and planted out in April on a south-west border, staked at once, protected with evergreen boughs on each side the rows from cutting winds and frost, afforded a first gathering on June 15th, a full fortnight before those sown outdoors. At the same time as those sown in pots William I., William II., and Day's Sunrise were sown on a south border. These were superb. The soil is similar to that where the first sowing yielded only half a crop, but it had not known Peas for years. There is therefore something after all worth considering in rotation. Of the three sorts William II. was much the best, and only a few days behind William I. It is well worth waiting for. Day's Sunrise is, from filling its pods indifferently, a "sunset" amongst early Peas.

Second Early.—The soil where the second-early crop was sown I

had turned over two spits deep and the bottom forked over, but the top soil was kept at the top, in fact left much as it was before, only moved and mixed, the manure being mixed with the top spit. I sowed Gladiator, Triumph, and Criterion, the two first growing about 3 feet high, and Criterion 6 feet. Gladiator was simply "a sight" of pods from near the bottom to the top of the haulm, and the crop prodigious. Triumph is a large-podded and blue-wrinkled Marrow of the first order as to quality and crop. Criterion is, as I have found it everywhere, the best second-early Pea, crop and quality being the tests of merit.

Main Crop.—We relied upon Criterion with Telephone and Telegraph. The two latter though good, were not up to their usual standard of excellence. Are they less carefully selected? Duke of Albany proved excellent, and the quality all that could be desired, yet it was not nearly so prolific nor had such well filled pods as Prodigy, which was a picture from the abundance of large handsome pods, and the quality is superb.

Latest Crops.—Autocrat grew very robustly, and formed a broad row from its branching habit, and it bears very low down for a tallish Pea. It grew over 5 feet high, and has large rounded pods well filled with large deep green Peas, the crop not coming in all at once but successionally. My impression of it is, that as a main crop and a late sort it is unrivalled, and the intention was to save all for seed, but so highly was it esteemed at table that not a single pod remained, and the only consolation granted on remonstrating about the Peas being all gathered was in the reply "they would have 'em." Best of All were the most indifferent of the kinds grown, Sturdy being very much better, indeed it seems to have a very much hardier constitution, and is a "come again" sort, the crop being produced successionally. Ne plus Ultra fully maintained its reputation as "one of the best" tall-growing late sorts, in fact a carefully selected true stock of this Pea is Ne plus Ultra as a "green" sort; and as a "white," which come up to the crop and delicious flavour of a true stock of British Queen? All points considered the latter was the best Pea of the year. It is not so showy either growing or dished as the best sorts, comparing badly with "King" and "Emperor," but the "proof of the pudding is in the eating," judged by which standard British Queen is the best.

Now we come to the selection, as follows:—Earliest, Veitch's Extra Early and William II.; second early, Criterion and Prodigy; later crops, Autocrat and Ne plus Ultra, with British Queen; for exhibition, Duke of Albany. If the height is a consideration, then in second early, Dr. Maclean and Triumph; and later crops, Best of All and Sturdy, with Marvel, the earliest being the same as before.

There may be better sorts, of which I shall be pleased to hear in order to test them, which are influenced by the practice. I tried to grow Peas this year on ground merely dug a spit deep, on others turned two spits deep and the bottom loosened, mixing only, and not bringing the bottom to the top, and trenching two spits deep, cleaning out the bottom and pointing it over, but bringing it to the surface, yet the bottom spit was placed at the top. The ground was well manured, and in all cases the manure was put down a spit deep. It may be as well to observe that our manure is that of stables, cow houses, and piggeries, simply mixed by turning and made—*i.e.*, the strawy parts into manure by saturating with the drainings; indeed, it is used raw, spread evenly on the surface, and dug or otherwise put under when time and weather permit, which on a clay soil is not always. Then as soon after the Peas are staked as opportunity offer, or by when they have "slatted," we mulch the whole of the ground with the manure above indicated for the medium growers, and the tall ones as well if there is not a between crop, when the mulching extends 18 to 24 inches wide on both sides, but we like to mulch the whole, and do so when practicable. "What a waste!" Manure under a summer sun will evaporate. Really I cannot see any waste of manurial matter at all corresponding to its being placed in a mountain-like heap, steaming away its qualities in order to form a close soapy mass full of poisonous acids. "Muck middens," with the ammonia evaporated or given off through heating, and its soluble constituents run off by rains, may be convenient, but it surely is not the way to get the manurial properties distributed over a large area and utilised to the best advantage. Placed on the surface as a mulching it does not heat, decomposition takes place slowly, and it cannot evaporate when dry, and if wet whatever is soluble is carried into the soil. Anyway the mulching answers, and what is of more consequence it as a dressing is more valuable than an equal thickness of hotbed manure; in fact, we benefit the current crop to the extent of what otherwise would pass into the air or be washed away and leave the ground in better heart for a succeeding crop.

The Peas on ground merely dug were not so good in crop as those on the soil stirred, but not turned upside down by fully a third, and those on the stirred soil were not so full in crop by a third as those grown on the trenched ground. The digging was effected in one-third the time of the stirred and trenched ground, which two last were about equal in labour, consequently we have a fair idea of the relative values of digging, deep cultivation without and with reversal of surface. There is, however, greater difference than appears, for by increasing the crop we increase the relative values of quality, which is the chief factor in estimating results. All the crops on the trenched ground were of a very much higher standard of excellence, except in the case of the early sorts, where earliness tells considerably as to value, but in other respects the results were identical.—UTILITARIAN.

GLOUCESTERSHIRE VIOLET (OR MINSTERWORTH) PLUM.

THIS Plum is named The Prince, but it is known in the Manchester market as Gloucestershire Violet. It grows freely in the alluvial soil of the Severn bank, and has existed here from time immemorial; indeed, it may be said to be almost indigenous, as it does not require grafting or budding for its propagation, but springs from the stone or from shoots growing from the roots, like the common Damson. It is an early Plum, ripening about a week after Rivers' Early. It is chiefly used for cooking or for jam, though as the flesh is soft it may be eaten without the consequences attendant on hard-fleshed Plums. In Manchester market, where it is chiefly sent, it obtains a much better price than Rivers' Early. The crop of fruit is uncertain, as the blossom is liable to be injured by spring frosts; but if the season is favourable the tree bears abundantly. The tree grows specially in the gardens of the cottagers, in the hedgerows, and on the banks of the Severn.—GEORGE VINER ELLIS, *Severn Bank, Minsterworth.*

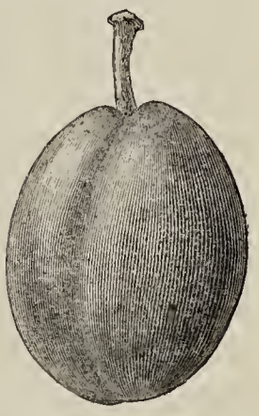


FIG. 31.—GLOUCESTER VIOLET PLUM.

[The Plum in question is represented in the figure. The fruit is oval, sometimes obovate, with a contraction near the stalk, and suture well defined; skin dark mahogany, covered with a thin bloom; stalk from half an inch to three-quarters long; flesh greenish, quite tender, sweet, and pleasantly flavoured; stone small, long, and channelled on the back. The fruit separates very easily from the stalk, and the flesh separates freely from the stone.]

NOTES ON EARLY ENGLISH HORTICULTURE.

(*Continued from page 144.*)

THINKING men generally are now agreed that the Crusades, terrible no doubt in their evils while they lasted, were afterwards fruitful for good. They broke down the barriers between nations, promoted travelling, helped to diffuse knowledge, and certainly aided the progress of horticulture, also of botany, its kindred science. In England it is very perceptible that frequent foreign wars, and the long domestic troubles connected with the "Wars of the Roses," prevented both nobles and commoners from taking practical interest in any branch of gardening. Our forefathers were no students of hygiene, but they were quite wide awake to the fact that man's diet should be a mixture of animal and vegetable food. But they put into their broths and stews the leaves or stems of wayside plants still abundant everywhere, though we do not think of eating them. Then as regards fruit, beside the common berries of the woods, people had wild Apples, Pears, and Cherries. Near Fulham, for instance, a place well known in this century by its orchards, there were in early times many Apple trees growing amongst the Willows on land just above the marshes; Crabs, small and sour no doubt, but they served for food, raw or cooked. Herbs, to be used as flavours or medicinally, were cultivated in gardens attached to the residences of the nobles or citizens, but ornamental gardening was as neglected during the Middle Ages of England as in the Saxon and Danish period; the lack of refinement forbade any interest in the culture of flowers. It is a curious fact that of all Europeans the Dutch are believed to have been the pioneers in the art of gardening after the decline of the Roman Empire; there is evidence that before the Crusades they had given attention to this subject, and sought out plants from other countries. Later in their history the ornamental details of their lace and linen manufactures would lead to the study of flowers; and it is

manifest that Holland has for some centuries had a great influence upon English horticulture, and will probably still affect it. The advertisements of the autumn season remind us of our indebtedness to this country for many varieties of favourite bulbs.

That to a limited extent, near London at least, fruit and vegetables were grown for the markets before the Tudors reigned appears from a side light we get from a quaint old ballad, which is undated, but belongs to the commencement of the fifteenth century. Its author was a Benedictine monk, and a friend or admirer of Chaucer. He tells how in the City streets people urged him to buy "Hot peascods," Strawberries also, and "Cherries on the ryse," this meaning, perhaps, Cherries on the natural branches, or else tied to sticks. About the Peas, we must recollect that our ancestors then were not accustomed to shell them, but boiled them in the pods, eating these whole as we do French Beans. Lydgate makes no mention of the vendors of Apples; such there may have been, but the costard-monger is not named till the time of Ben Jonson. For a good while now this word has had a wider meaning than it had then; originally it applied to one who sold Apples, specially Costards, picked probably in his own orchard on the north of the City. There is also in the City records of the reign of Henry VI. a petition presented to the Mayor by some gardeners of nobles and citizens, who had for an uncertain period been accustomed to sell pulse, Cherries, and other garden produce belonging to their masters in front of the Church of St. Austin, Broad Street. They had been driven away by the ecclesiastics on the pretence that their conduct was noisy and disorderly; after hearing both sides the Mayor thought he must appoint the gardeners another market, and he removed their stand to a place near the river at Blackfriars. About the same date, or earlier, we read of herb-wives, who brought for sale Basil, Saffron, Rosemary, and similar aromatics much in repute. In the fourteenth and fifteenth centuries, therefore, it seems many of the dwellers in London had gardens. The City guilds or companies had, most of them, halls surrounded by trees or shrubs. Apples, and perhaps Cherries, grew in the heart of the metropolis, for St. Martin Pomary, a church in Ironmonger Lane, Cheapside, was so called from the Apple trees that grew around it in mediæval times. Also some of the citizens who had a taste that way took plots a little distance from the boundaries, in what are now the unpromising localities of Spitalfields, Goodmans Fields, Whitechapel, and Shoreditch, where they grew more than they required for their own households, and sent the remainder into the public market, as we have seen. An ancient deed again indicates that a number of citizens, some 400 years ago, had ground near the City Road, their plots joining each other, and their occupations are stated. I find amongst them a large proportion of tailors or clothiers, which is a curious fact; I do not think a love of gardening is common in men of that calling now-a-days, though I have noticed it in many shoemakers. Part of this land cultivated by the citizens of walled London remained unbuilt upon until a date comparatively recent.

We have referred to the fact that the Romans paid particular attention to the Vine, training it on trelliswork, up poles, possibly also allowing to run along the side of warm banks; and we may assume the cultivation of this plant has been continuous in Britain since their occupation. Domesday Book informs us that in the village of Westminster one Barnard held from the Abbot four arpents of vineyard, and at Kensington Aubrey de Vere did service for three arpents. (It is doubtful what extent of land this word represents.) Other early allusions to vineyards occur. There was one in the village of St. Giles; another on the bank of the Old Bourne, in view of London city; yet we do not read of the street sale of Grapes. It is obvious neither Saxons nor Normans ate these to any extent; the Grape yield was utilised by being converted into wine.

Pulse, mentioned above as an article sold by the City gardeners, would include Peas and Beans; but it was not until the Normans arrived that Peas were eaten green. The Saxons allowed the pods to ripen and stored them. Mr. Glasspoole points out that they were grown both in Scotland and England to some extent as early as 1299; for in that year an English force engaged upon a siege of a castle in Lothian had, from failure of their stock of provisions, to subsist for awhile upon the Peas and Beans they picked in the fields. Fosbrooke has also noted the fact that long before the Reformation the culture of the Pea was a specialty in some of the monastery gardens, and the monks used to compete with each other to produce Green Peas by an early date in Lent: how they forced the plants we do not know. Gerard, writing about the garden Bean, gave it as his opinion that it differed only through cultivation from a wild kind he found in many places; perhaps, while seemingly wild, a descendant from the Bean which the Romans grew in Britain, for it was a vegetable they much favoured. Other varieties of the Pea and Bean were certainly brought to our island by returning Crusaders. Spinach is thought to have been an introduction due to some monk or pilgrim coming to us from Spain. For a long time its cultivation was very limited, but our forefathers are said to have used as a sort of Spinach, and even planted in their gardens, the wild species of Chenopodium called Bonus Henricus, also the Goosefoot, and named either after Henry IV. of France or Henry VI. of England. The leaves were boiled, and the stalks also scraped, peeled and eaten as Asparagus. It is not till the year 1502 that we get the first English work on horticulture by Richard Arnold, haberdasher, of St. Magnus, London. In this he discourses on grafting and planting trees, intermingling remarks on the four seasons and astrology.—J. R. S. C.



NOTES ON JUDGING.

It is pretty well known among rosarians that to be a good judge a man must be either an exhibitor himself or else a zealous attendant at Rose shows, with frequent opportunity of seeing good Roses in a growing state. It is astonishing how soon a man loses the "eye for a Rose" which will enable him to distinguish the different varieties apart as they appear in a stand. I have heard one who lives among the best of Roses all the year round say he cannot depend upon distinguishing all the sorts accurately at the beginning of a fresh season till his own Roses are out and his mind's eye refreshed as it were by all their different peculiarities. Secretaries of Rose shows should remember this, and if a difficulty arises in finding judges well up to the task see if it be not possible to arrange that different sets of exhibitors should judge each other, as this course generally produces complete satisfaction.

In judging Roses the following points have to be taken into consideration:—Form or shape, colour, stability, freshness, size, and beauty of arrangement. Those of our lady friends who are ignorant of the laws which govern the warriors of the Rose are always surprised in the first place at the rigidity of the golden rule that puts form before colour, and next, that scent, which they rightly consider one of the glories of the Rose, should be so ignored. In answer to the first point the rosarian will remind his fair companion that a perfect knowledge of colour will not enable an artist to make even a presentable picture if his drawing be faulty. And if he wishes to air his classical lore he will tell her that the ancient Romans (and she will probably concede that they knew something of art) had "form" or "shape" (forma) as their word for "beauty," and "shapely" (formosus) as their word for "beautiful."

With regard to scent, he can only plead that in a tent containing some thousands of blooms a man (with possibly in the past season a baddish cold in the head) would find it a difficult task to judge Roses by their scent. But although it is well agreed that beauty of form should be the first consideration, there is not, I fear, the same unanimity as to the weight that should be given to the other points mentioned. On some few occasions I have thought that even too much consideration has been given to form to the neglect of all other points whatever; but as a rule most judges would probably place them in much the same order as I have named them above.

It goes without saying that at times there is such a discrepancy between the exhibits that a careful general survey of each will be sufficient. But, as a rule, every bloom should be separately noted, even in triplets. What I should call the rough-and-ready way is then sometimes used. The judge runs rapidly over each stand, counting the number of "good" Roses in each, and gives his decision accordingly. This seems to me a most unsatisfactory mode of procedure. In the same stand one bloom may be almost good and another very good, yet the first counts nothing, and the other only one. In a close contest this might surely result in a miscarriage of justice. In all shows of horses, dogs, and poultry, judging by points has been the only safe rule, and it should be the same with Roses. One bloom should be selected as the standard of so many points, and every other Rose in each stand should be awarded 0, 1, 2, 3, or even in the case of a medal bloom, 4 points. One of the judges should act as teller, and the others, one of whom should put down the figures, should watch and correct him if they differ from his estimate. It is best not to add up the totals till all the class has been once judged. Then, and not till then, in my judgment (others perhaps will differ) should beauty of arrangement, if necessary, come into consideration.

Form, then, being the first consideration, the question at once arises, What is beauty of form? Five different shapes or types of form are given and illustrated in the N.R.S. Catalogue — the cupped, the imbricated, the globular, the globular high centre, and the flat. Now, it seems to me that by rights two beautifully shaped Roses of any two of these five types should, *cæteris paribus*, have an equal number of points. As a matter of fact, however, the flat type finds no favour, and probably few would wish to give it an equal position with the others. But I am inclined to think that the other four at least should stand upon he

same footing. Yet this is hardly the case; the imbricated and the globular with high centre are the most admired forms, while the true cupped shape has fallen into disrepute. I say the true cupped shape, because Baroness Rothschild, which is figured in the N.R.S. Catalogue as the type, is hardly what used to be called a cupped Rose. I should perhaps have taken Coupe d'Hébé as more nearly representing the cupped type, and I remember once seeing a bloom of Anna de Diesbach, which was a most perfect cup, well filled up at the bottom, yet most regular and smooth in outside, inside, and edge; a prettier object by far, I thought, for the eye to rest on than the silver cup which it helped to win. Such a bloom is a hundred times more difficult to get than a perfectly imbricated A. K. Williams, or a perfect globular high centre Innocente Pirola.

Regularity and smoothness of outline are of course necessary to perfect beauty of form, but how are judges to deal with the five different types? Are they, or are they not, to consider each perfect in its way? A case occurred this season in which I had the misfortune to differ from brother judges. A celebrated amateur, a much better judge than myself, was the teller. He passed over a bloom of Heinrich Schultheis with 0 to its credit. I demurred. It was a good bloom in my estimation, regular and smooth in outline, the two outer rows of petals fairly expanded, the remainder standing well and regularly up; but, and here was the difficulty, the upstanding part of the bloom formed a cup—a good cup—well filled up at the bottom, and showing no pretence of an eye, but still it was hollow in the centre where it ought to have been high my confrères said, and I could not get one point for it. I called it a globular Rose with cupped centre, and opposed the dictum that a bloom should have no points because it was hollow in the centre, or what became of the cupped form? However, I was in the minority, poor Schultheis got no points, and the stand, by a very little, lost the first prize.

Again, in judging triplets of Teas two stands were nearly equal, but there was a bad triplet in each. In the first the triplet was certainly faulty, as it was stained and dirty; the doubtful triplet in the other was Jules Finger, and when one of my colleagues pronounced them the best, I objected that they were doubtful in shape, and livid and ugly in colour. "Yes," he replied, "but that is the nature of the beast," which I was constrained to admit is true. But ought we not to judge blooms as they are according to a standard of perfection, and to make no allowance for "the nature of the beast?"

On these two occasions I had the misfortune to differ from my brother judges, but at least I had the courage of my opinions, which is not always the case. At a cottagers' show held recently in a small village the Judges were Mr. A, head gardener at the big place with a fair staff under him; Mr. B, gardener in a smaller establishment, who has but one subordinate; and Mr. C, the "parson's man." All worked most harmoniously during the early part of the judging, Mr. A acting as teller, and finding his awards duly confirmed by the other two. At last Mr. C ventured to differ, and appealed to Mr. B, whose confirmations hitherto had been mostly mute ones. His answer was characteristic, I fear, of a not uncommon spirit at a small local show—"Oh! I always goes with Mr. A!" It was just as well perhaps, for A is a competent painstaking and, conscientious Judge, but it was "rough" upon C, who was evidently in a hopeless minority throughout, if he should venture to differ, and, but for the look of the thing, might as well have gone home at once.

I still find it a grievance, both as exhibitor and judge, that so much latitude is allowed as to the size of boxes and the distance between the blooms; and I still think it would be better and fairer for judges, exhibitors, and the public if there was to be one uniform size each for sixes, twelves, eighteens, and twenty-fours, and one agreed-upon distance between the blooms. A smaller distance might be allowed for Teas, and a uniform plan be adopted for triplets. I am bound to add that I can only call to mind one person whom I have overwhelmed by my arguments and induced to agree with me on this subject, and I believe he is neither an exhibitor nor a judge.

The practice of manipulating, or "dressing" Rose blooms for show is undoubtedly increasing, and has probably received additional impetus this year from the ungenial weather, which prevented the blooms from opening naturally. How far the practice may or may not be desirable is rather a difficult question. A purist, with no experience in the matter, would probably declaim against it at once, as a silly sacrilege, as bad as "painting the Lily." On further inquiry, however, he would probably find that an opening bud may be honestly, really, and naturally thus improved. The handle of a budding knife is the instrument generally used, though a pencil in certain hands is accustomed to work wonders. The great thing is to get the outside petals down. It is little use interfering with the inner ones except by blowing upon them.

I have said that an opening bud may be thus naturally improved. But it may also, if the expression is allowable, be unnaturally improved. There are certain Roses, of which Madame Willermoz is one of the most noticeable, with whom it is not natural that the outer petals should turn down. And I confess, though I am somewhat loth to do so, that I think it a defect in this Rose that the outer petals continue to stand up so straight, and that it seems to me an improvement, though certainly not a natural one, when they are carefully and cleverly turned down. The outside petals are often stained and discoloured, while pure as snow within, and dressing would of course greatly improve the appearance in respect of colour and cleanness alone. I call to mind a triplet of Madame Willermoz at one of the principal shows this year, which, owing to extensive and audacious turning down of the outer petals, looked lovely against its weather-stained neighbours. But how far should this be allowed? for they certainly did not look like Madame Willermoz. The character of the Rose was entirely altered.

There are other Roses, such as Madame Eugène Verdier, H.P., of this shape, which I should called "semi-cupped" rather than "globular," with whom it is not natural that the outside petals should turn down: but because it is unnatural, I do not think it necessarily follows that it is no improvement. Florists think they *can* improve on Nature, and surely they very often do, by hydridising, training, and cultivation. However, the turning down of petals received a slight check at a country Rose Show this season. Two beautiful H.P.'s were being compared with each other by the Judges, in competition for the silver medal for best H.P. The owner of one of these Roses, which we will call a Reynolds Hole, was anxiously watching the proceedings from outside, through the open door of the tent. Great was his dismay when the Judge who held his Rose passed his o her hand slowly and suspiciously up round it from beneath. Click! back when the creased-down petals like released springs, and Reynolds Hole and its owner were "shut up" together.

I do not, of course, mean that there was any deception on the part of the exhibitor, or that he had done anything wrong or underhanded. "They all do it;" I do it myself. Competition is very keen, and, to be successful, the exhibitor must be like the two special coachman friends of the elder Mr. Weller—"up to all manner of games." It would be very difficult to legislate successfully against dressing, even if it were universally disapproved of. And yet I think if we were to come to have instruments for dressing Roses regularly figured and advertised, as is done for Dahlias and Chrysanthemums, we should feel a little shame. Where are we to draw the line?—W. R. Raillem.

RESTORING UNHEALTHY ROSES.

Is it ever worth while to attempt to restore an old and sickly Rose? I think not. I have often tried it, though not on Mr. Bardney's plan, and never have succeeded in doing more than galvanising them into life for a year or two. If the Rose grown generally shows signs of going off, I suppose there is nothing for it but shifting the whole stock to some virgin soil if you can get it; but if, as is usual in an old ground, only a few keep going back every year, my plan has been to dig up the old plant, making a large hole, and exchange the soil with a barrowload from the kitchen garden, and then plant either a good stock or a new plant. Even in the first case I am practically sure of a good young plant the next summer but one, while no plan could secure a good bloom earlier, and even then the plant would be an old one ready to slip through your fingers at an early day.—Duckwing.

ROSES ON THE MANETTI STOCK AT NEWTOWNARDS.

Mr. D. Gilmour, jun., and "S. S." seem (page 262) to entertain very incorrect views of my reference to Messrs. Dickson's Roses in my article descriptive of what I saw in their nurseries there less than a month ago, when having a holiday run in the North of Ireland and Scotland. I am not, I need hardly say, remotely interested in one Rose stock more than another, and I only attempted to describe what I saw, and what any visitor could see. I propose, like Mr. Gilmour, jun., to consult your space, and first briefly refer to his and "S. S.'s" notes, and then to make a few general observations. As to the latter, he says, "I long since came to the conclusion the Manetti is worse than useless, except for manufacturing yearly Roses; for if most Roses cannot live without it they will not live with it in many soils," and then he finishes a rather surprising sentence by saying in the last clause "some good Roses have gone out of cultivation chiefly through it," mentioning for illustration Olivier Delhomme and Marie Baumann. I must plead ignorance of Olivier Delhomme; and Marie Baumann, I am personally aware, has not gone out of cultivation, nor is the Manetti so "hateful to it" as he seems to think. What is meant by "manufacturing yearly Roses?" Is the insinuation that Rose growers bud on the Manetti purposely to last a year, and that a new stock must be purchased the following year if the Rose supply is to be maintained? I am justified in putting this construction on it, for your humorous correspondent, D. Gilmour, jun., says, "after the first year the growth and the blooms become small by degrees and beautifully less until death closes the painful scene!" and lest I, or any other benighted "Rose manufacturer, to last one year," should not be demolished by this poetic catastrophe, he warningly intimates, "I could go on pitching into the Manetti over several sheets."

I am sure any reader who has been a careful student of his racy style and fertile imagination will take this readily for granted. I will dispose of my reference to the brief note of "S. S." by asking you to invite him to give an explanation to your Rose-loving readers who have not yet lost faith in the Manetti, of the seeming paradox—"If most Roses cannot live without the Manetti they cannot live with it in many soils." "Most Roses cannot live except budded on the Manetti!" What does Mr. Gilmour, jun., say to that? I never made so sweeping a statement.

For brevity I will finish my reference to that gentleman's note with "two facts and a prophecy." 1st, So far as I am aware, all the chief prizes carried away by nurserymen, and in numbers of cases by amateurs in the British Islands, were by Roses grown on Manetti stocks. At least, so I am informed; but I should like to see the opinions of others who have had greater facilities for forming a decided opinion. I can, however, speak definitely that this is true of Messrs. Dickson in Ireland and Scotland. Second fact. I want to know, would the nurserymen combine to disappoint their customers by continuing to grow and supply them with Roses that would practically last only one year? The insinuation is absurd, if not worse, the fact being that nurserymen conduct their business on very different principles. Mr. Gilmour, or others, admittedly may have a soil unsuited to the Manetti stock, but this never follows; therefore, "twenty years hence it will be unknown in the leading nurseries." Why, in my own experience, I can testify, though my collection is limited, I have Hybrid Perpetuals, Teas, and Bourbons, and a few Hybrid Teas planted out, and not even regularly lifted for seven or eight years, flowering regularly and still alive and robust on the Manetti stock, and so of many others I know. Most certainly thousands of the Roses I saw and referred to in Messrs. Alexander Dickson & Sons' nurseries at Newtownards were not budded last year, nor seemingly for many years. I am sure Mr. Gilmour would concede to me the same right to "prophesy" he claims for himself. The Manetti stock has been in use for twenty years; it is still vigorous and popular both with nurserymen and their customers, and, borrowing Macaulay's idea, it is very likely to be so when the traveller from New Zealand takes his stand on London Bridge to sketch the ruins of St. Paul's.—W. J. MURPHY, *Clonmel.*

THE MANETTI STOCK.

I NOTE, page 262, that "D. G." takes very strong exception to the Manetti as a suitable stock for Roses, and I was somewhat surprised at the very emphatic manner in which he denounces it. I surely think "D. G." must have had inferior soil at his disposal or that his climate was bad. My experience with Roses budded on the Manetti extends over many years, and is totally at variance with the statements made by "D. G." I have under my charge here several thousand Roses, and all, with the exception of Teas, are on Manetti stocks, and I can without egotism say it would be difficult to find healthier, freer flowering plants. Quite one-half of my plants are over twenty years old, and are still vigorous and healthy, while the blooms are of good quality. The soil is somewhat heavy, and the garden is within 200 yards of the sea.—JAMES RUSSELL, *Crawfordsburn Gardens.*

ROSE HOUSES.

THANKS for the fulfilment of Mr. Bardney's promise as to the recruiting of early forced Roses. In the Journal of May 17th last, Mr. Bardney, speaking of the height of houses for Rose growing, says, "If the house was constructed specially for the production of blooms for market it would be much lower." Now, will Mr. Bardney kindly say what width of house and what height he would advise for a house for growing early Roses for market? When he speaks of a house being much lower if specially made for growing Roses for market does he mean the "pitch" would be less, or merely that the side lights would be lower, the eaves coming nearly down to the ground? If it would be at all interesting to the readers of our Journal, I have pretty largely grown the new Roses of this and last year, and could give some reliable account of them.—S. S.

[No doubt many of our readers would be interested in any remarks our correspondent favours us with on the subject named.]

RENOVATING FRUIT TREES.

IN the course of our duties we must not only attend to fruit trees in a state of prosperity, but those of a less fortunate character. The gardener's vocation somewhat resembles the physician's in this respect; he is called upon to control the exuberant, to assist the weak, and to renew, as far as possible, the shattered constitution; and, to carry the parallel still farther, to perform surgical operations where necessary. Very many fruit trees, especially in the ordinary orchard, perish, or fall into a state of premature vegetable decrepitude, for want of a little assistance rendered in time. The renewal of the vigour of trees thus situated has often been referred to, but the remarks have been principally confined to branch-pruning. We will now proceed to show that much may be done at the root; and in our opinion the end of September is the most eligible time for the operation. Matters of this kind constitute a sort of extra in gardening affairs; no man of any standing in our profession will leave any of these extras until spring if he can possibly avoid it. Spring in these days comes laden with a burden peculiarly its own; a burden which it is scarcely capable of sustaining. Spring will do well, then, to borrow a few hours from sober-faced and lightly laden autumn. Borrow, did we say? it must be stolen—shame to say so; it will never be repaid.

Not only is this good with regard to the case in hand as an expedient, but in our opinion the practice is right in principle. If early autumn planting is right in the majority of cases; if the putting out cuttings of many deciduous trees is right; why then this is right, and for the very same reasons. The process is thus set forth in Lindley's "The Theory of Horticulture." "As soon as a plant has shed its leaves it is as much at rest for the season as it will be at any subsequent period; indeed, it is greater at that time, because its excitability is completely exhausted by the season of growth; and it has had no time to recover it. If at that time a root is wounded a process of granulation or cicatrisation will commence, just as it does in cuttings, and from that granulation, which is a mere development of the horizontal cellular system, roots will eventually proceed." Here, then, are arguments of a scientific character, backed by the phenomena of everyday occurrence. So then it will be seen that a granular process takes place in cuttings, technically termed a callus, and this callus is the producer of fibres. This will serve to throw light on the process which occurs when roots are cut, as in the act of transplanting or root-pruning. Such injuries, then, if they must be inflicted, had best be perpetuated early in the autumn, inasmuch as the trees have a longer period to recruit in; and if the process take place in the end of September granulations, if not actual fibres, will be produced by the coming spring; Nature is latently making efforts, slowly but surely, to repair these damages. Injuries arising from late spring planting, as to fruit trees, are very frequently productive of serious aggressions on the part of the insect tribes. Amongst these, the red spider and the aphides hold a conspicuous position; also the scale family, or those bearing the generic title Coccus. Having thus paved the way to a recommendation of an early procedure in these matters we will examine cases.

Many trees are to be met with in all quarters failing betimes, and evidently not through age alone, neither through what is termed canker; for although the extreme points of many fruit trees are apt to shrivel and die away, especially ordinary orchard trees, yet on examination it will be found that such is not in general the disease termed canker. Since ordinary orchard trees, then, are more liable to be thus conditioned than those on prepared soils in our kitchen gardens, how is it? Why, because the majority of our orchard trees have free liberty to range in ungenial subsoils. From the subsoil, in the main—whether as being too retentive of chilling moisture, or from the presence of deleterious matter—proceeds most of the evils we have pointed to; and such suggested to us, some years since, the general adoption of artificial substrata and the planting on higher levels.

The wearing-out or weak trees alluded to, after their lower roots become paralysed or lost, are driven to seek sustenance by means of the surface fibres alone; and as all that portion next the tree has been long robbed of its fertility, the very exterior points alone are the only active agents; and it is principally to these that we apply renovating materials. Where it is intended to carry out this renovating process a heap of compost must of course be provided. A good sound loamy turf is the principal thing to obtain; and those who cannot obtain it should get some turfy material of some kind as part of the compost. One portion of this, one of old manure, and a third of half-decayed litter of any kind, leaves, &c., well chopped and mixed, will make a good compost. If plenty of a good sound garden soil of a rich character be at hand the mass may receive nearly a half of it.

In commencing operations with a tree thus situated—say an orchard Apple tree, with a trunk of 6 or 8 inches diameter and a head corresponding—let the operator draw a circle around it with a trammel about 7 feet from the bole; this constitutes, in the main, the boundary line inwards of his operations, and serves to keep the spade from unwarrantable liberties. The operator may now proceed to dig a trench two spades in width all round the tree; and in the course of his work he must take especial notice where the principal horizontal roots are, and where there is a comparative absence of them; in the former case politely giving way, notwithstanding his circle, and in the latter advancing towards the bole of the tree.

After excavating this one spit deep all round he must proceed to take a second spit, or enough to gain quite half a yard in depth; and if this second spit is an inferior material it must be wheeled on one side by itself. This done as before the operator will now know on which side of the tree the least roots are, and at that position he must bore for the tap roots—that is to say, he must dig under the tree, and endeavour, without disturbing it too much, to cut all deep-descending and ill-looking roots away, filling the hole beneath full of weeds or any refuse stuff from the rubbish yard. This will induce some fresh fibres in due time, for there need be no further fear of tap-roots; and now he may go round and fill in his trench, cramming lumps of turf and manure into every crevice within the circle, and where, through the absence of roots, the spade has made extra advances. If the compost is tolerably dry, which it ought to be, he may tread it slightly as he proceeds. The whole being filled in, and we ought to have said the wounded roots all cut with a sharp knife, the surface of the interior of the circle may be eased of all the loose soil thereon and a coating of the same dressing

applied—equal in bulk to that removed—and finally 4 inches of good half-decayed manure cased all over the surface ; and thenceforth no footsteps should be permitted until the whole has settled.

In the middle of November we would put the trees under a course of pruning, using the knife rather severely, especially in thinning out. All decaying stumps of course must be removed, and the whole of the tree scraped and cleaned thoroughly, extirpating both moss and insects. Whilst this is being done boards should be laid beneath to tread on, for if the mulching is "puddled" the previous operation will be nullified. However, if frosty, there will be occasion for it. As soon as pruned the whole may receive a thorough soaking with dunghill water. Trees thus treated will, in the majority of cases, recover much of the freshness of youth within a couple of years.—N.

Notes & Gleanings

Mr. Viner Ellis sends the following note relative to the origin of the Victoria Plum :—"In the 'Fruit Manual,' fourth edition, it is said to be a Sussex Plum, but I would suggest another origin for it. It has grown here certainly longer than I can remember (seventy years) under the name of Dolphin (a corruption I presume of 'Dauphin.') The introduction of the Plum as far as I can remember was in this way. At first the tree was limited to the fronts of the houses of the owners of small vessels (sloops) navigating the Severn to ports in the Bristol Channel, and conveying fruit and merchandise to and from those ports. From those houses it spread higher up the river and farther inland until this parish and other parishes were stocked and the tree was planted as a standard. Now it appears to me as most probable that from the intercourse with the foreigner (Frenchmen) at the Channel ports, the introduction of the Dolphin (Dauphin) and of the Prune into this district on the banks of the Severn was due."

—— We learn with regret that Mr. W. Court of Messrs. J. Veitch and Sons, Chelsea nursery, died rather suddenly on the 17th inst. Mr. Court was well known as a skilful propagator, and has performed good service in the hybridisation of the Sarracenias and Nepenthes, one of the latter being named in his honour. He frequently visited the United States as a representative of the firm, and his quiet, genial, but business-like manner gained him general esteem. He was forty-five years of age, and had been ailing slightly for some time.

—— A correspondent writes :—"As already announced, after thirty years, Mr. John Wilson has resigned the secretaryship of the York Gala, and Mr. Charles Simmonds is appointed his successor. Mr. Wilson will carry with him the esteem and regard of every exhibitor, judge, and others officially engaged at the Gala during the above period. It has been a wonderful horticultural exhibition, and attracted horticulturists from all parts, the usual annual expenses being about £1500. Always watchful for the progress of the Gala, he during the last twenty-five years obtained upwards of £550 from nurserymen, horticulturists, and other friends, besides the medals awarded by the Trustees of the Veitch and Turner Memorial Funds, as also contributing £35 from his own pocket. A Committee of influential gentlemen in the city will still guide the affairs of the Society, and the business will be carried on at the old address. Mr. Wilson gives up his position whilst the Society is in the zenith of its fame, with an invested fund of £1725 to provide against reverses. It is the intention of the York Committee to present Mr. Wilson with a handsome silver salver, and many of the exhibitors and other friends also contemplate a souvenir of their esteem and regard."

—— Mr. G. Silver, Wroxall Abbey Gardens, near Warwick, sends the following note :—"We had a very remarkable occurrence here on Monday afternoon, the 24th inst., and I think worth recording. About midday the air began to thicken from the north, and at one o'clock we were enveloped in a cloud of black flies. Millions of these little creatures were to be seen, and the ground is strewn with them, giving it quite a black appearance. Some Callas that I had taken from the ground in the morning and potted were stood out in a shower of rain. We can now scarcely see what they are, they are black with flies. Vegetation of all kinds is also covered with them. I should imagine that this is in some way accounted for by the early departure of the swallows from this neighbourhood, as there appear to be only a few young ones left."

—— The Rev. W. W. Wingfield, Gulval Vicarage, Penzance, writes: —"Can any of your correspondents inform me as to the rarity or otherwise of Araucaria imbricata producing cones in England? It has done so in this parish this year, some ten cones being on one tree out of about twenty-five planted together in 1888. The cone-bearing tree has its laterals in closer more compact growth than the others."

—— The "Kew Bulletin" for September continues the reports on colonial fruits, a long and interesting account of the fruits of Dominica being contributed by Dr. H. A. Alford Nichols. Shorter reports on Montserrat, St. Christopher and Nevis, Virgin Islands, and Bermuda are also good. A chapter on Indiarubber in Upper Burma contains some useful information.

—— Eucharis grandiflora.—Mr. Record has found out what we Orchid collectors know from experience—*i.e.*, that tropical bulbs and plants have a resting and growing season corresponding with the dry and rainy seasons in their own country. I was once in the island of St. Lucia, and saw Amaryllis equestre in flower, but the ground was so hard that I broke several negro's hoes in trying to get up some bulbs, and eventually had to rely upon a cutlass, used for cutting sugarcane, to get them up, therefore it seems as well that Eucharis grandiflora should be rootbound and given a resting season. In the tropics the rains are very abundant for a time, so he will be right in giving a liberal treatment at the proper season. Although the Eucharis before mentioned is supposed to come from the river Amazon district, I am not aware that modern travellers have ever found its habitat, or that any record is to be found that it came from there except the name, but it is without doubt of South American origin. These few hints may be of value to bulb growers. The thing is not to rely entirely upon what other growers do, but to try and find the conditions they grow under in their own native homes, and adopt as nearly similar a *modus operandi* as possible.—Winton.

—— Lifting Potatoes.—We feared from the premature decay of the haulms of early and second early varieties that if the unfavourable weather continued the tubers would be badly diseased. This I am sorry to say is their condition, and we shall not be able to save many for seed from those that are now being lifted. Large quantities of the tubers appear to be sound, but when they are cut in two they are black in the centre. The majority are in this condition, and in a very short time they will all decay. Potatoes, since kidney varieties were practically over, have been very cheap, only realising from 1s. 6d. to 2s. a cwt. They were cheap the whole of last year, but the reverse this winter will probably be the case unless the late crops escape ; and it is scarcely possible that they can, for the bad weather which we experienced through June and July has continued in the north of England with no prospect of a change at present.—W. B.

—— Once more have Tuberous Begonias substantiated their claim to be regarded as excellent bedding plants. A season like the present is a severe test to any plants employed in the flower garden. Those found to bear the test should be encouraged. The advantage Tuberous Begonias possess over most bedding plants is that they progress in any season be it either very wet or very dry, assuming, of course, they are treated in a rational manner at the commencement of the season. When grown under the cool system the plants at once commence flowering, and continue until frost cuts them down. Wet weather seems to suit them, ours have done quite as well this season as in any past year. I am convinced that many people ruin their chances of success by pushing on the plants in heat, thus rendering them soft and unable to withstand extremes of either heat or cold, wet or dry.—M.

—— Blenheim Orange and Hero of Lockinge Melons.—I can fully endorse Mr. Iggulden's remarks on the above excellent Melons in last week's Journal, page 266, as I grow both varieties pretty extensively, both in low, well-heated, span-roof houses, and in cold pits. Both Blenheim Orange and Hero of Lockinge are very handsome as well as first-rate Melons when well grown. I showed one fruit of each in my first prize collection of fruit at Brighton on the 12th inst. The Blenheim Orange weighed just upon 7 lbs., and the Lockinge 5 lbs., both fruits being beautifully netted and highly coloured. I have several more fruits of the same dimensions ripe and ripening. I tried very hard, but failed, to have some of these fruit ripe a week earlier. We grow our Melons in a good yellow loam, to which a fifth part of lime rubble is added, giving occasional surface-dressings of Beeson's

manure before giving water at the roots when the fruits are swelling, as well as liberal waterings of tepid liquid manure between the said dressings, avoiding wetting the soil immediately round the stems of the plants in doing so.—H. W. WARD.

—— REFERRING to PEA VEITCH'S AUTOCRAT, "W. I." remarks:—"We find this comparatively new variety very productive at the present time, and are of opinion it will prove one of the best for the late crops. It attains a height of about 4 feet, is of branching habit, and yields abundance of handsome pods well filled with green and very tender Peas. Autocrat will be extensively cultivated long after many much-lauded varieties are 'things of the past,' at least such is my impression."

—— THE same correspondent commends the TURNIP-ROOTED BEET, CARTER'S CRIMSON BALL, observing:—"The ordinary Turnip-rooted Beet is much too coarse this season, a great per-centage of the roots being of no service for salads. Not so the new form under notice, and once more it has demonstrated its superiority. At least 90 per cent. of the roots are richly coloured, and all are tender and sweet when cooked."

—— "B." writes: "At Messrs. R. P. Ker & Sons, Aigburth Nurseries, ACHIMENES GLOXINIÆFLORA was recently noticeable with its light faintly spotted flowers, but a variety of this form distinguished as aurea was a decided acquisition. The flower was much the same as the former, but more than double its size, with a blotch of rich orange in the throat. It is decidedly the finest form of Achimenes that I have yet seen. If it proves a good grower and profuse flowerer it will before long become a general favourite."

—— "In the same nursery THE CROTONS are magnificent, and it is questionable if they could be surpassed. The house is narrow, with no central stage, and only a narrow one on the sides. The side lights are at least 4 feet high, while the roof is very flat. Houses with a sharp pitch do not find favour in these nurseries; in fact in all recent constructions they are reverting to the old-fashioned plan, as the houses are strikingly flat in the roof. Whatever might be urged in favour of houses with sharp-pitched roofs, the fact that plants do well in these flat-roofed housed cannot be overlooked. The former are certainly good for one thing if for nothing else, and that is to tax the ingenuity of those in charge, in order to bring plants within reasonable distance of the glass."

—— AGAPANTHUS UMBELLATUS ALBUS.—The blue form of the good old Agapanthus is common, but is not nearly so valuable as the white variety. The latter was extensively shown at the late Bath Show by Messrs. R. Veitch & Son of Exeter, and many visitors were much struck with its value, and it ought to become popular, especially where pure white cut flowers are in demand. It is equally as easily grown as the old A. umbellatus, and the single flowers may be detached and effectively used in bottonholes, bouquets, wreaths, and crosses. As a rule good white flowers are not very plentiful late in August and early in September, and the white Agapanthus is a welcome addition to the list.

—— ONE of the best border plants this season is BOCCONIA CORDATA. Its bold foliage, deep green on the upper surface and ashy grey beneath, has developed thoroughly under the influence of much rain, while its stems have perfected fine spikes of bloom at a height of 7 feet in some instances. In no position has it shown to more advantage than in beds of Rhododendrons in open positions. If the largest spikes are considered too large for decoration when cut the side spikes are not; indeed, we find them useful for mixing with other border flowers. The Bocconia increases by division of the roots; in fact every piece of root 2 or 3 inches long sends up vigorous growths, which quickly assume large proportions if planted in any moderate soil.—B. W.

—— COREOPSIS DRUMMONDI.—What a beautiful annual this is! I do not think it is nearly so much appreciated as it should be. Planted in beds or in clumps in mixed borders it has a very telling effect. I consider it by far the best variety of any of the Corcopses. Its bright golden yellow flowers when cut last in water for eight or ten days, and the profusion of flowers obtained from a small bed enables one to make the most of the space at command. We have used it on several occasions arranged with the red-tinged plumes on Rhus Cotinus for the dinner table, and on every occasion it has been greatly admired. Owing to the wet summer this year the plants have grown taller than usual, and the flowers have been exceptionally large and well coloured.—G. T. SILVER.

—— IN spite of the wet and cold summer STENACTIS SPECIOSA has done remarkably well this year. With us it commenced flowering the second week in July, and has continued up to now. The flowers are useful for cutting, being light, and remain fresh some time. Light blue flowers are not too plentiful, therefore this Stenactis is all the more prized. A stock is easily obtained by dividing the old stool in the autumn; every piece having a root will make a good plant, and flower the next season if it has the protection of a cold frame during the winter, planting from these during April. This is a good method if a large stock is required in a short time, otherwise dividing the roots into pieces 4 inches square, planting at once in the borders, answers very well.—S. P.

—— "E." commends LOBELIA CARDINALIS as a capital plant for a wet season. "Here in a bed is a mass of about four dozen plants that have grown 4 feet high, and each bears a fine spike of bloom, which viewed from a distance even is most effective. Under a close inspection the brilliant cardinal-coloured flowers are always appreciated. The rich dark-coloured leaves add to its beauty, which is enhanced by a carpet of Antennaria tomentosa covering the ground, and making a capital contrast with the Lobelias. In a season like the present it is well to make note of this plant doing such good service when other flowering plants have run to leaves. When a stock of plants is obtained of the true sort they are preferable to those obtained from seed, which vary so much in the foliage that uniformity of growth and colour is not nearly so good. Therefore we increase the stock by dividing such as are of the true type."



SCHOMBURGHKIAS.

THIS genus of Orchids is a remarkable one. The plants have much the appearance of some giant species of Cattleya, but this particular species resembles the noble Lælia superbiens, and when not in flower it requires a well-practised eye to detect the difference. When in flower the veriest tyro in Orchid culture would perceive they were two distinct species. We have long, however, suspected that the Lælia is a sort of stepping-stone between the two genera, and might, without any far-fetched or deeply studied character, be transferred to the family now under notice. The flowers of the Lælia are produced on very long flower stems, and are arranged in a close panicle at the end, exactly in a similar way to those of S. crispa.

S. CRISPA.—This has large pseudo-bulbs, with two or sometimes three long, rather thin, leaves on the summit. The flowers are produced on stems frequently 5 or 6 feet long, on a short panicle; they are of a brownish yellow, much crisped or curled at the edges; the lip is white, striped with pink, and edged with pale yellow. Each flower is large, measuring 2½ inches across. It has a slight perfume.

S. MARGINATA; Surinam. The pseudo-bulbs of this species are shorter and thicker than the preceding. The flowers are of a deep orange, shaded with red; the lip is pale lilac; the whole flower is margined or bordered with brownish-red—hence its specific name. This is a truly fine plant. It is sold in the markets of the West India Islands under the name of the "Spread Eagle," from a fanciful miniature resemblance of the flower to that noble bird. The flowers are handsome, and produced on somewhat shorter stems than S. crispa. This plant is well deserving of cultivation in medium-sized or large collections.

S. TIBICINIS; Honduras. The pseudo-bulbs of this species are rather remarkable; they are hollow when old, and blunt at the apex. The natives cut them off, and form them so as to be able to blow through them, and produce a noise like the horns of a cow when blown through; hence they call it the Cow-horn Orchis. This species has the longest flower stems, frequently from 8 to 9 feet; they are of a deep pink colour, spotted with white on the outside, and with rich brown-red inside. The lip is white in the centre, rose colour at the sides. It has a lobe in the middle of a fine bronzy-red colour. Like all the genus, the flower springs from the top of the last-formed pseudo-bulb, and generally flowers about the month of June. Equally handsome, and worthy of cultivation with the rest of the genus.

S. UNDULATA; La Guayra.—This, very possibly, is but a variety of S. crispa. It is sometimes named S. violacea from the deep colour of the flowers. Sepals and petals of a light purple, waved

or curled at the edges; lip violet-coloured; flowers much larger than those of S. crispa. Flower stems 8 or 9 feet long.

CULTURE.—While these plants are young, newly imported, or in a sickly state, they should be grown on blocks of wood; but when they produce plenty of roots in the air, and have made middling-sized pseudo-bulbs, they should be potted. The best plants we ever saw were grown in broken crocks. The pots were wider than usual at the top, and the plants were set as it were in the midst of the crocks, care being taken that the buds at the base of the pseudo-bulbs were left uncovered. The roots were running about on the surface and amongst the crocks quite freely and healthily, and the pseudo-bulbs appeared to grow stronger and stronger each successive season, the plants had flowered and appeared to be quite happy and at home. We are trying this somewhat novel compost, and our plants are evidently improving. Yet we do not entirely depend upon this method, for we remember a friend tried growing Orchids of all kinds in crocks and found it did not answer. Therefore we grow part of our stock in a compost of very fibrous peat, half-decayed leaves, chopped sphagnum, broken pots and charcoal, all mixed together, draining extra well, and raising the plants up on a hillock in the centre of the pots on the compost, securing them well till they get established with stoutish sticks. These precautions are taken to prevent the roots from rotting at the ends, which they are very apt to do if cultivated in a careless or common way. They will grow on blocks best, but in that way do not obtain sufficient nutriment to produce large pseudo-bulbs, without which they will not produce flowers. As they are natives of warm climates they require great heat when growing, even as high as 80° to 85° by day and 75° by night; but when at rest 10° or 15° lower will be sufficient.—ORCHID GROWER.

THE PERSHORE PLUM.

ON page 246 mention is made of our old and valuable friend the Pershore Plum, and it is stated that Gisborne's is more prolific than the Pershore. This we Pershore people deny *in toto*. We can point to a plantation of say 20 acres of Pershores; and we will venture to assert that our 20 acres will produce more fruit than 30 acres of Gisborne's. One friend of mine in this district has sent nearly 2000 pots of Pershores away this year at 5s. per pot of 72 lbs. net, and we have been known to send from our small station 100 tons of fruit in one day. We do not say ours is good for dessert, but we do say it is one of the very best grown for preserving (I have sent you a few to test them). The trees throw up suckers very freely. They are dug up, planted out about 5 yards apart, and they begin to bear directly (no grafting required). But there is one thing we are certain of, and that is that they do not thrive and bear so well out of this district, taking an area of say seven or eight miles. We send hundreds away every year in the shape of stocks to all parts, but they do best by far in this locality. We find Rivers' Early Prolific, the Pershore, and the Victoria the most profitable sorts. Four growers in this immediate neighbourhood this year (and it is only a partial crop) will send away from four to four and a half thousand pots of Pershores.—J. W., *Pershore*.

[The Plums received are much larger than any sample of Gisborne's we have seen this year.]

POTATOES.

IN reply to a recent query about Potatoes, the earlier sorts were much smaller than usual, but quality good. Snowdrop has been admitted as a standard variety. Not quite so early as Myatt's, it is a better cropper, and the quality is quite as good. Early Puritan promises well, and Sutton's Early Market as a good round will be again tried. The only sorts left in the ground were two new late varieties on trial and White Don for everyday use. These latter are badly smitten with disease. I hear the disease has attacked second early sorts all round. In fields the haulm of ripening Potatoes is very badly blackened. This, of course, is mainly on light soils, where growth was made early in the season. On heavy soils the Regents have grown very badly on account of the wet condition of the land. Good weather for the past week will make up for late kinds, which are sure to be a fair crop. As a grower said to me the other day, there will be no Potatoes at 10s. per ton this season. The crop all over will be fairly good, but not so overwhelmingly plentiful as last year, and the disease will help to keep prices up.—B.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 25TH.

DAHLIAS were excellently represented at last Tuesday's meeting in the Westminster Drill Hall, numerous large collections of blooms being staged both by nurserymen and amateurs. Show, Fancy Pompon, single and Cactus varieties were included, the selections in most cases also comprising promising novelties. It would scarcely have been thought possible that as many as sixteen could be found worthy of certificates, but this was the number the Floral Committee awarded, and it may be presumed that the members were in a particularly happy and generous frame of mind, for they are seldom so liberal. As a show of cut flowers it was admirable, but the weather was very unfavourable, and the attendance of visitors consequently small.

FRUIT COMMITTEE.—Present: John Lee, Esq., in the chair, and Messrs. J. Smith, G. W. Cummins, J. Cheal, T. J. Saltmarsh, R. D. Blackmore, W. Marshall, S. Ford, Harrison Weir, P. Crowley, P. Barr, and T. B. Haywood.

Mr. G. H. Richards, Somerley Gardens, Ringwood, Hants, exhibited an unusually fine fruit of a Queen Pine, massive, deep, well-proportioned, and weighing 7 lbs. 6½ ozs. A cultural commendation was awarded. Mr. P. W. Fairgrieve, Dunkeld Gardens, N.B., sent a collection of Peaches and Nectarines, Hale's Early and Early York being the best of the former, with Cox's Emperor, Lawson's Golden Gage, Pond's Seedling, and Imperial Gage amongst the Plums. Messrs. Hurst and Son, 152, Houndsditch, sent a "hybrid Cucumber," said to be the result of a cross between Telegraph and Blue Gown, the fruits large, smooth, and dark green. Mr. W. Roupell sent fruits of Criterion Tomatoes, Mr. R. Dean sent a dessert Apple with a Russian-like title, and Messrs. J. Veitch & Sons, Chelsea, had an interesting collection of Apples, Pears, and Plums (silver Banksian medal).

A first-class certificate was awarded for *Melon Glenhurst Perfection* (C. J. Waite), a green flesh variety of excellent flavour, neat globular shape, moderate size, and well netted.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. W. Bates, H. Herbst, W. Wilks, T. Baines, R. Dean, B. Wynne, J. Dominy, H. M. Pollett, J. O'Brien, W. Holmes, E. Hill, G. Duffield, W. Goldring, J. Walker, W. H. Lowe, and J. Fraser.

Apart from the Dahlias the most interesting exhibit was a grand group of Nerine Fothergilli major from Baron Schröder, The Dell, Egham (gardener, Mr. Ballantine). The plants were of various sizes, from small bulbs in 48-size pots to veteran clumps of numerous large bulbs, and they bore a total of about 250 trusses containing ten to thirteen flowers each. The variety is one of the finest grown, both in the size of the flowers and truss, breadth of the petals, and brightness of colour, though the latter character was not seen to good advantage at Westminster owing to an unsuitable background in a leaden-tinted wall. Adiantums were, however, employed as a margin, and imparted a fresh pleasing finish to what was undoubtedly the finest group of Nerines exhibited in London, amply meriting the silver Banksian medal awarded by the Committee. At The Dell these plants are grown throughout the season in a lean-to frame facing the south, being only removed when they are flowering to be arranged in the houses. They receive a good roasting and thorough resting, are frequently supplied with liquid manure where growing and flowering, but they are only repotted every three or four years, and very little manure is used in the sandy loam employed as soil. The illustration (fig. 32) on the next page well represents the characters of this Nerine.

F. G. Tautz, Esq., Studley House, Hammersmith (gardener, Mr. J. C. Cowley), exhibited a plant of Cycnoches chlorochilum, with large peculiarly formed greenish flowers (cultural commendation). G. F. Wilson, Esq., brought some flowers of Lilium auratum and lancifolium, cut from the open ground at Oakwood Grange, Weybridge. W. Keith, Esq., Cornwalls, Brentwood (gardener, Mr. J. T. West), contributed a handsome collection of Dahlias, representing all the types, for which a bronze Banksian medal was awarded, an inadequate recognition of so fine an amateur exhibit. Mr. G. Ford, Leonardslee Gardens, Horsham, showed some remarkably beautiful Celosias, fine plume-like trusses of most varied tints, gold, red and crimson predominating. The strain was highly commended.

The nurserymen's exhibits occupied the greater portion of the space, several contributions of an important character being staged. Messrs. Paul & Son, Waltham Cross, had eight boxes of H.P. and Tea Roses, all fresh, bright, and extremely good for such a late period. Freely flowered wreath-like stems of Lapagerias rosea and alba also came from the same firm (bronze Banksian medal). Mr. T. S. Ware, Tottenham, had his customary charming collection of hardy flowers, comprising Shirley Poppies, Gaillardias, Lilies, Geums, Asters, and several novelties, besides Dahlias (silver Banksian medal). Messrs. J. Veitch & Sons, Chelsea, sent a group of plants, including a neat little shrub, Berberis Thunbergi, having abundant bright red berries, fine trusses of Hydrangea paniculata grandiflora, specimens of Cratægus pyracantha Lalindei, with trusses of the numerous varied greenhouse Rhododendrons (silver Banksian medal).

A wonderfully fine group of Nepenthes from Mr. B. S. Williams, Upper Holloway, gained the exhibitor a silver-gilt Banksian medal, and very rarely is such a choice collection of these interesting plants exhibited. Most of the distinct species, varieties, and hybrids were shown, the plants fine healthy specimens bearing numerous well-developed pitchers.

The Dahlias were extremely fine, and so many varieties were shown that we have not space this week for even a selection, but nearly all sections were shown well, quite rivalling the National Dahlia Exhibition in quality of blooms of the Show, Fancy, Pompon, and "Cactus" types especially, the singles being in the majority. The exhibitors of Dahlias were Mr. C. Turner, Slough, Messrs. Paul & Son, Cheshunt, who also had a group of hardy flowers (silver Banksian medal), Messrs. Keynes, Williams & Co., Salisbury (silver Banksian medal), and Mr. G. Humphries, Chippenham (bronze Banksian medal). Messrs. H. Cannell & Sons, Swanley, had an attractive group of Cannas, Begonias, and Dahlias (silver Banksian medal). From Chiswick came a group of Liliput Asters, very neat and pretty; Mr. W. Baylor Hartland, Cork, sent flowers of Helianthus multiflorus plenus; Mr. R. Dean some fine Pentstemons (vote of thanks); and Mr. G. Stevens, Putney, fine blooms of Chrysanthemums Mr. Wellams and C. Wagstaff.

CERTIFICATED PLANTS.

Dahlia Maud (Turner).—This and the following one are show varieties, raised by Mr. Fellowes but shown by Mr. Turner, both handsome varieties. The above named has large, handsomely built deep blooms, of a delicate mauve tint, and white centre. *Agnes*, a rich clear yellow variety, the bloom of excellent shape, deep and symmetrical. *John Cooper* (Humphreys).

Pompon Dahlias (Turner).—*Juliette*, bright orange, neat; *Admiration*, maroon tipped white: *Vivid*, light scarlet, pretty; *Lothair*, scarlet, with a yellow centre.

Pompon Dahlia (Keynes, Williams & Co.).—*Isabel*, bright yellow, tipped bronze; *Little Darkie*, deep maroon, a neat compact bloom; *Mathew Campbell*, yellow and orange, streaked crimson; *Panthea*, a Cactus variety, with bright reddish salmon-coloured flowers; *Honoria*, of a similar type, rich clear yellow.

Nerine excellens (T. S. Ware).—A graceful bulbous plant, with bright, rosy, narrow, undulated petals, and darker mid veins.



FIG. 32.—NERINE FOTHERGILLI MAJOR.

Lilium Wallichianum (T. S. Ware).—The flower of the Lily is somewhat like a small L. auratum, white, with a yellowish centre, about 5 inches in diameter; the leaves linear and short.

Aster Townsendi (T. S. Ware).—A bold variety, with broad flower heads, deep purplish blue, and a yellow centre, bushy, compact, and free.

Harpalium rigidum semiplenum (T. S. Ware).—A semi-double variety of this useful autumn flowering plant, bright golden yellow.

Canna Geoffrey St. Hilaire (J. Veitch & Sons).—Foliage dark red, flowers very large and brilliant scarlet, very effective.

Ornamental Beet McGrigor's Favourite (B. S. Williams).—Certificated as a decorative plant, leaves narrow, tapering, and deep red.

Canna Paul Bert (Cannell & Sons).—A handsome variety, with large, bold, orange red flowers.



FIG. 33.—STUARTIA PSEUDO-CAMELLIA.

STUARTIAS.

So little diversity is introduced into shrubberies as a rule, that there is always ample excuse for calling attention to species adapted for planting either in them or as isolated specimens on lawns. The Stuartias are not numerous, and they come within the rather long list of neglected plants to which cultivators might advantageously devote some consideration. At least two are old inhabitants of British gardens, though they are now seldom seen except in a few establishments where rarities are prized. One of these is S. virginica, which seems to have been known in the middle of the eighteenth century, but it was not brought into prominent notice until it was figured in "Andrews' Repository" in 1804 under the name of Stewartia marilandica. S. pentagyna is another North American species which was cultivated at Kew before 1785, and has been described under the now discarded name of Malachodendron ovatum. Both these have large white or creamy white flowers, with rich green ovate leaves, and constitute really handsome

shrubs that when in flower are scarcely rivalled by any other occupants. A beautiful addition has within recent years been made to this interesting genus in the species S. pseudo-Camellia, a native of Japan, whence it was introduced by Messrs. J. Veitch & Sons of Chelsea. Plants have been established at Coombe Wood, where they have proved quite hardy, like the American forms, and the flowering specimens shown a few weeks ago at the Royal Horticultural Society's meeting at Westminster received the recognition of the Floral Committee in the shape of a first-class certificate. From these examples the woodcut (fig. 33) was prepared, showing the flower and foliage forms.

All are deciduous shrubs which succeed in ordinary good garden soil, not appearing very particular as to situation, though a moderately sunny position suits them the best.

GRAPES SCALDING.

I SHOULD like to see a few more gardeners' opinion on this question. If other varieties of Grapes will scald equally as much as Lady Downe's if subjected to the same conditions, why is it that Lady Downe's will scald and the others not when grown in the same house? I consider that scalding is peculiar to Lady Downe's, but that it can be prevented by those in charge, and that the conditions which will scald Lady Downe's will not scald the Black Hamburgh or any other variety. Surely my views are not singular, and I am under the impression that 99 per cent. of gardeners will endorse my opinion. Mr. Simpson takes exception to my statement in not having a "fixed temperature." Now I maintain that it is having this fixed temperature that is the root of the evil. Often on a warm "muggy" morning the temperature of a vinery is higher without heat in the pipes than on a cooler morning with much heat in the pipes. My advice to all young men who wish to prevent scalding with Lady Downe's Grapes is to keep a comfortable warmth in the pipes during the night, with a circulation of air, and this increased as soon as it is seen that the sun would soon raise the temperature. The temperature about the Vines near the roof is always much higher when the sun is shining than in the body of the house where the thermometer is usually kept, and when fixed temperatures are adhered to the foliage is "stewing" when the thermometer down below does not register the desired point.

In answer to Mr. Bardney's remarks on page 260, I will refer him to his original article at page 162, so as to keep him to the point in question. In that article he says that "it is no more difficult to scald the berries of Black Hamburgh and Madresfield Court than those of Lady Downe's," a statement which I say Mr. Bardney cannot substantiate, and how any gardener with any practical experience in Grape-growing can make such a statement I am at a loss to understand. As Mr. Riding says "it would require gross carelessness to accomplish such a feat," whatever the structures are like. I had the management of five vineries for three years, with not one top or bottom light moveable, air being admitted by small ventilators in the back wall, and in these vineries I never saw a scalded berry of Black Hamburgh, Muscat of Alexandria, or West's St. Peter's, but on this latter Vine a Lady Downe's was grafted, but it used to scald, but very slightly. The ventilator over this Vine used to be kept open, but the heating was defective. A "chink" of air in a corner of a vinery I should be sorry to leave as the only precaution and a safeguard from scalding. The ordinary precautions I use in Grape-growing is common sense practice, which any gardener would use if he required good Grapes to place on his employer's table. We are more quickly on the alert with the ventilation in the Lady Downe's house than with the others, but these we do not neglect whatever the time of year or season may be, which is merely to keep the Vines in health and vigour.

Mr. Bardney also takes exception to my statement about moisture condensing on the berries. What causes moisture to condense on the berries? Why an overheated atmosphere, caused by the sun shining suddenly on the house without sufficient ventilation, as well as insufficient heat in the pipes to prevent the berries becoming cold. Allow the above to happen, and you will soon have Lady Downe's scalded. A fair warmth in the pipes at night with sufficient ventilation will prevent this. Full bunches of Lady Downe's are more profitable than pieces. I am quite aware that some people practise syringing Vines morning and evening, but what market growers worthy of the name do so? What value do they get for the Grapes? Do they syringe Lady Downe's in the morning at stoning time? If so, it must be done very early, with heat in the pipes, and ventilation. The latter part of Mr. Bardney's article requires no comment from me, if he keeps to his text.—A. YOUNG.

I PRESUME by Mr. Riding's remarks on page 261, on the subject of Grapes scalding, that he considers it almost impossible to grow Lady Downe's Grape without the berries being more or less scalded. If so I think that must be fancy on his part. But I must beg to remind Mr. Riding that Lady Downe's and Black Hamburghs growing in the same house could not be fairly compared, as the two varieties would not be at the same stage of growth at the same time; the period at which the former would be liable to scald would be passed by the latter. If the two varieties could be grown exactly under the conditions necessary to ward off the evil, I fail to see any difference in their liability to scald.

With regard to Black Hamburghs grown with little fire heat, I consider they are just as liable to scald as Lady Downe's, if the necessary precautions are not taken. Black Hamburghs not requiring so much heat, are generally more freely ventilated, hence the secret of their more generally escaping the evil. The case Mr. Riding advances, where the Grapes are grown with scarcely any fuel, does not, in my opinion, prove conclusively that there is not a comparison between the two varieties. The "necessary precautions" may have been taken in the one case but not in the other at the proper time. The range he refers to being treated exactly alike accounts for the evil, for I should not think of treating late Grapes exactly the same as early varieties.

Mr. Riding considers "that it would require gross carelessness to accomplish the feat" of scalding Black Hamburghs, but I consider Mr. Bardney's question to Mr. Young is applicable to Mr. Riding. If it is bad management or gross carelessness in the one case, what is it in the other? Perhaps Mr. Young and Mr. Riding would give us their opinion as to why they consider that Lady Downe's Grape is constitutionally or otherwise more liable to scald than any other Grape. I take great interest in Grape-growing, and would gladly welcome any addition to my store of knowledge, and doubtless it would be accepted by many more of our readers, as it is by friendly discussion that knowledge is diffused.

Mr. Riding appears to have been troubled with the scalding of Lady Downe's for the past nine years more or less; but if next season he will pay more strict attention to the fixed temperatures, that I here give for the scalding period (65° at night, air being admitted at the top of the house before the temperature reaches 75° by sun heat, and plenty of air to prevent it rising above 85° until the air of the house is thoroughly dry), and faithfully report the result in the Journal next season, I shall be greatly deceived if he is not satisfied with the result. A few degrees either way of course matters little, and if it is an old fad it may be none the worse for being old.—W. SIMPSON, *Knowsley*.

I SHOULD like to express my opinion with respect to Grapes scalding. Never have I seen Black Hamburghs scald, and if, as Mr. Bardney says, he has had the misfortune to have some so affected, I am of the same opinion as your other correspondents—namely, that there is a mistake in the management. It is evident that the air-giving was not attended to early enough in the morning, or the scalding would never have happened, and particularly with Black Hamburghs.

I will admit that Lady Downe's, under the best of management, will scald sometimes, and especially in such a season as the one we have experienced. Nevertheless, I am in a position to say that we have escaped without any serious loss, and I attribute our success entirely to the ventilation—viz., about 2 inches at the top of the house, and the same at the bottom, with a little fire heat, and as the temperature rises we admit more air. As a proof of the above, we have at the present time as good a house of Lady Downe's as anyone would wish to see, both in colour and size of berries. I quite agree with Mr. Young with respect to fixed temperatures; not on any account would I adopt such a practice, it is against Nature altogether.—R. KIRBY, *Angley Park Gardens*.

THE FRUIT TRADE OF CALIFORNIA.—The British consul at San Francisco, in the course of a report on the agriculture of California, refers to the enormous fruit trade of that State. It produces every kind of fruit that grows in a semi-tropical or temperate climate—among the former are the Orange, Lemon, Citron, Shaddock, and other citrous fruits, the Olive, Pomegranate, Fig, Banana, Apricot, Nectarine, Walnuts, and Almonds, Grapes, producing wine and raisins; belonging to the temperate zone are Apples, Pears, Plums, Cherries, Peaches, Currants, Gooseberries, Blackberries, Raspberries, and Strawberries. The green fruit trade of the State has increased enormously; in 1887 the trade in green fruit with the Eastern States amounted to about 35,000,000 lb. weight. The output of the various cannaries in 1886 amounted to about 30,000,000 lb., including 659,950 cases of fruit, 203,500 of vegetables, and 22,500 of jellies and jams. The estimate for 1887 is 792,500 cases of fruit, with an average of about 45 lb. of fruit to the case. Of these, 220,000 cases were Peaches, 175,500 Apricots, 150,000 Pears, 60,000 Cherries, 40,000 Plums, 35,000 Grapes, 25,000 Blackberries, and 15,000 each Strawberries and Gooseberries. The export of dried and evaporated fruits and vegetables is also enormous. Thus the export of Grapes treated in this way in 1887 was 16,000,000 lb., Apricots 3,000,000 lb., honey 1,340,000 lb., French Prunes 1,750,000 lb., Walnuts 1,500,000 lb., Peaches 1,750,000 lb., Grapes 600,000 lb., Apples (evaporated) 550,000 lb., Peaches (evaporated) 1,250,000 lb., Almonds 500,000 lb., Plums 500,000 lb., and smaller quantities of many other fruits. The growing of Grapes for raisins has proved a most profitable crop, with a ready market for all that can be made. Californians believe that their raisin crop will eventually drive the foreign product from the markets of the United States, and from the statistics of the trade the consul is inclined to believe that they will. The wine production in 1887 was 13,000,000 gallons; 150,000 acres of the State are planted with Vines, and not less than 90 per cent. of these are foreign varieties. "That the improvement in the quality of wine produced is very marked there can be no doubt, and the former California wine, with its disagreeable, harsh, foxy taste, is fast becoming a thing of the past. This in due to the importation of the best varieties of foreign Vines, and a more care-

ful system of cultivation, manufacture, and preservation of the wine."—(*Liverpool Daily Mercury.*)



THE NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE.

THE revised edition of this catalogue for 1888 is just to hand, and without doubt it is the most complete and satisfactory work of the kind yet issued. It comprises sixty-five pages of closely printed matter arranged in the following manner. After the preface, which describes the method adopted in the revision, is a list of the Committee, and a short history of the Chrysanthemum. Then follow the varieties in their several sections, each group being preceded by a brief paragraph giving their characteristics, no formal definition being attempted. In the incurved section eighty varieties are described in alphabetical order, a list of thirty-six being selected from these and "named in the order of merit as determined by the vote" received by each. The Japanese are dealt with in a similar way, eighty-two varieties being described, and forty-eight select varieties are enumerated separately. Section 3 contains the Japanese reflexed, twenty-four varieties described, and twelve selected from these. Of reflexed eighteen are described and twelve selected. Of large Anemones twenty are described and twelve selected. There are fourteen Japanese Anemones and a select list of twelve in the order of merit, fifty Pompons and twenty-four selected, with twenty-four Pompon Anemones and fifteen selected, lists of twenty-four early flowering and eighteen late-flowering varieties also being added. An alphabetical list of varieties of all sections occupies a good portion of the work, brief descriptions being given of those not included in the select lists, with indications in all cases as to the section to which they belong. The catalogue is a neat book, well printed, and a useful addition to Chrysanthemum literature.

In the preface is given the following description of the method adopted :—

When the returns were received they were individually compared with the existing list, and the votes recorded for each variety, necessitating the examination of over 900 printed pages, or about 27,000 names, which portion of the work, including the whole of the select lists, was undertaken by Messrs. Castle and Gordon. In some instances the MS. returns were also considerable ; for instance, one member sent over thirty pages of descriptions, corrections, and additions, and altogether not less than 150 pages of MSS. had to be examined, collated, condensed, or elaborated. There was necessarily much repetition, and some unavoidable discrepancies, doubtful points to be elucidated, and questions to be decided that occasioned much more labour than could be imagined from the results set forth in this catalogue. The system of election adopted, however, has enabled the revisers to restrict the lists to the varieties most generally in favour with exhibitors in all parts of the country. The information supplied has also permitted the extension of the descriptions in most cases, the chief characters (following name, raiser, date of introduction or raising, and synonyms) being taken in this order—colour, size and style of bloom, season of flowering, and average height of plant.

Those marked "early" are most unreliable for shows after the first week in November unless the terminal buds are taken, this of course depending to some extent upon the character of the season and the locality where they are grown ; but it may be considered as a general indication that the crown bud is too early for exhibition blooms. The varieties recorded, on the other hand, as "late" are generally recommended to be taken on the crown bud for all souther or midland shows, while the midseason varieties can be taken on either bud, according to the condition of the plant and date of the show. But it must be remembered that no absolute rule can be drawn up in these matters, though an attempt has been made, in response to many requests, to give a few hints on a difficult subject. The height indicated "dwarf" in the descriptions is an average of 4 feet ; by "medium," 5 feet to 6 feet ; and by "tall," 6 feet to 7 feet and upwards.

The Japanese reflexed group has been a source of some difficulty, as a divergence of opinion evidently existed amongst the Committee as to what varieties should be included, and several advocated the exclusion of Cullingfordi from the true reflexed, placing it in the new section. In the determination of this point, as in all others of a similar character, one method only was adopted—namely, taking the majority of the votes, and by this means the Japanese reflexed were selected. It must, however, be observed that some of the varieties received a number of votes both for the Japanese and the Japanese reflexed classes, and adding these together brings the total high in the list. The leading varieties of the select list in this way, and in the order of the number of votes, are the following—Val d'Andorre, Criterion and Elaine, equal ; L'Adorable and Jeanne Délaux, equal ; M. John Laing, Triomphe du Nord, La Nymphe, Dr. Macary, M. Henry Jacotot, Margot and Phœbus. This order, it will be seen, differs from that determined by the number of votes as Japanese reflexed, alone indicated in the list following the described selections. One variety has been excluded from the select Japanese reflexed first published—namely, Gorgeous, and this has been done because it appears two varieties are in cultivation under the name and there was danger of confusion arising.

CHRYSANTHEMUMS AT FAREHAM.

SPENDING a few days on the south coast, and hearing so much of the southern growers of Chrysanthemums, I decided early one morning to visit one of them. Time being rather short I started for Fareham to look round Messrs. W. & G. Drover's nurseries, not being able to reach Swanmore Park till another time, so I had no trouble in finding Mr. W. Drover, who kindly showed me round. The first three houses were filled with Begonias, Fuchsias, Ferns, &c., of different sizes. The next house, one large span, 40 by 20 feet, was filled with Camellia alba plena, 5 to 7 feet high, having been replanted last March to check their growth ; it has well repaid for doing, every plant being well set for bloom. The next house, the same size, is filled with Richardias, of which about 1000 plants are just placed. The other houses are devoted to Gardenias, Stephanotis, plenty of flower being picked at the present time. Two long ranges of glass, 100 feet long, are filled with the most suitable Roses for cutting purposes, as the cut flower trade here is extensive. I must conclude with a few words about the popular flower, the Chrysanthemum, grown here so well and with such numbers of other plants. Messrs. W. & G. Drover must be very energetic, for they look after the Chrysanthemum after the busy day's work is over, the watering of course being done in the day when needed. There are 800 plants grown on the system Mr. Molyneux describes. All the plants as they stood in rows looked very promising. Avalanche looks particularly strong, and plants of W. G. Drover, the pink variety sent out from here, are looking well. All the other varieties are up to the same standard. Several new varieties are growing here to be shown this year for the first time, which I hope to see later on.—A. W. R.

NEW CHRYSANTHEMUMS.

AT a recent meeting of the National Society's Floral Committee the following members were present :—E. Sanderson, Esq., in the chair, and Messrs. W. Holmes, H. Cannell, L. Castle, J. Mardlin, W. Boyce, J. P. Kendall, T. Bevan, R. Owen, G. Steven, and G. Addison. The Chrysanthemums submitted were not numerous, and only three certificates were awarded as follows :—

Chrysanthemum Mrs. Hawkins (Hawkins & Bennett).—This was certificated on the previous day by the Royal Horticultural Society. It is a golden variety of the G. Wermig style, forming with this and Mrs. Burrell a tree of yellow forms of the Madame Desgrange's type, all good early flowering varieties.

Chrysanthemum Fanchette (R. Owen).—A charming Pompon, like Lyon in shape of flower, but of a pleasing light rosy tint, the lower surface of the florets silvery.

Chrysanthemum Mrs. J. Pitcher (J. Pitcher).—A useful early flowering variety, with flowers of a delicate blush hue.

At the same meeting certificates were awarded for the following plants :—Aster Comet and Triomphe (H. Glasscock), Dahlia Mikado (T. W. Girdlestone), Beauty of Brentwood (J. T. West), Gertrude (H. Glasscock), Miss Ramsbottom (T. S. Ware), Victoria (J. Cheal and Sons), Admiration and Kathleen (C. Turner) ; Pompon Dahlias Fairy Tales, Little Ethel, Little Darkie, and decorative Panthea, from Messrs. Keynes Williams & Co., Carnation Mrs. Reynolds Hole (Dicksons & Co.), Pelargonium Robert Owen (R. Owen), with Gladiolus Mrs. Lindrell and Phyllis from Messrs. Burrell.

SMALL FRUIT FARMS.

THE first farmer was a gardener and a fruit grower. His labour consisted in caring for the trees that yielded the fruits on which he subsisted. In tropical countries where fruits ripen through the year men still largely live on the products of the Banana, which it has been said produces a greater amount of nutriment per acre than any kind of grain. It is quite possible that some kinds of small fruits, and especially the Grape, might contest with the Banana for supplying man's wants for food from small areas. The small fruits are veritable foods and not mere relishes, as they are too often considered. If used as food more extensively mankind would be healthier and happier. Then fruit-growing, as it conduces to this result, is a benefit to the race. By diversifying farm labour it also helps to make all branches of farming more profitable.

In some sections of country where fruit generally succeeds the devotion of entire farms to the growing of fruit has become quite common, and is liable to be still more so. It is every year more evident that for exclusive grain-growing of any kind the Eastern farmer cannot compete with the great West. In fact, the Western farmer is himself hard pushed to compete successfully in Wheat production with the Wheat of Russia and India. It is this which within a few years has so largely stimulated the making of butter and cheese at the West. There is money in dairy products for Western farmers on cheap lands, especially as these enable them better than grain-growing to maintain the fertility of their soil. But with the West monopolising grain and dairy products what is there for the Eastern farmer ?

Fruit-growing seems the most natural answer to this inquiry. There are many advantages in this kind of farming. It does away with the need of expensive machinery required in grain-growing or the more

expensive outfit in cows needed by the dairymen. By dividing attention between a variety of fruits the farmer can provide something to do most of the time and some revenue through a large part of the year. This kind of business necessitates the subdivision of farms. It is impossible for a man to properly care for more than a few acres of the small fruits, and a part of his land should be in Apples, Pears, and Quinces, which require less continuous care during the growing season than do the various kinds of berries.

The change to this kind of farming should be made gradually. Only the small fruits will pay anything for the first two or three years. Strawberries give their best crop a year after planting. Raspberries and Blackberries are a year later, but will bear several crops without needing to be renewed.

We do not believe there is serious danger of overdoing the production of any kind of good fruit. If the market is glutted and prices are low it is usually more the fault of inferior quality, a deficient distribution than of excessive supply. To some extent the choicest fruit makes its own market; but it needs some business enterprise and push to bring producer and consumer together. Farmers sometimes complain that the middleman takes too large a share of the profits. If he does so in the sale of fruit let them try doing their own marketing. In almost every rural neighbourhood are families doing without fruits who would gladly buy them if brought to their doors as they are in the city. It is rather odd that while fruits and vegetables are altogether grown in the country people have been obliged to go to the city markets to obtain them.

This arises mainly from the fact that fruit-growing is made incidental to other farming, or is so extensive that only wholesale methods of disposing of fruit are practicable. But the middleman is obliged to take an extreme profit out of fruits because of their perishable character. It is for this reason that fruit growers should, so far as possible, market the products of their land themselves. This necessarily limits the area they can cultivate and care for, including harvesting and marketing, though extra help will always be needed when the fruit is ready to be gathered to have the crop saved without waste.

Can a farmer make a fair living and provide competency against old age from fruit-growing on small areas? Thousands are doing this and there is room for many more. It is not a business that dazzles with ambitious hopes of enormous profits. No branch of farming offers such tempting prizes of great wealth as do the mercantile and professional careers. But there are also fewer blanks. Most of the failures in farming come from trying to do too much. This is more true of fruit-growing than of anything else, for the reason that most of the work requires greater care than can be given on an extensive scale.—(*American Cultivator.*)

HELIANTHUS MULTIFLORUS PLENUS.

This is one of the few plants that seem to defy the elements, for although it has rained daily for the past fortnight it is covered with its bright yellow flower heads. It thrives amazingly in the neighbourhood of towns; in fact, it seems at home in any position where the soil is fertile. For the past three weeks it has been particularly conspicuous amon st clumps of dark foliaged Hollies, and will continue until severe frosts set in. Light frosts that will destroy Dahlias do not appear to injure it in the least. If these plants are allowed to grow undisturbed for a few years, clumps of large size are formed, carrying hundreds of flowers serviceable for cutting. We have found it one of the most useful plants in the garden for supplying flowers for church decorations; it appears specially adapted for harvest festivals. All who have to supply flowers in quantity for decorations of this description, and do not object to the colour, will find this double Helianthus one of the most profitable plants that can be grown.

It is easily propagated by division. The best plan perhaps is to lift one good plant early in the year, and scores of small fleshy tubers will be found. If these are placed in boxes, or singly in pots, and placed under glass, they will make strong plants with a single stem by the end of May, when they may be planted outside. They will produce a few flowers the first season, but the second they will be strong plants, and flower profusely.—G.

THE PROGRESS OF BOTANY.

At the recent meeting of the British Association in Bath, Mr. W. T. Thiselton Dyer, Director of the Royal Gardens Kew, presided in the section devoted to Biology, and delivered an address on botanical subjects, from which the following extracts (from a full report in *Nature*) may be found of interest to our readers.

It is not so very long ago that at English Universities, at least, the pursuit of botany was regarded rather as an elegant accomplishment than as a serious occupation. This is the more remarkable because at every critical point in the history of botanical science the names of our countrymen will be found to occupy an honourable place in the field of progress and discovery. In the seventeenth century Hooke and Grew laid the foundation of the cell-theory, while Millington, by discovering the function of stamens, completed the theory of the flower. In the following century Morrison first raised Ferns from spores, Lindsay detected the Fern prothallus, Ray laid the foundation of a natural classification, Hales discovered root-pressure, and Priestley the absorption of carbon dioxide and the evolution of oxygen by plants. In the early part of the present one we have Knight's discovery of the true cause of geotropism, Daubeny's of the effect upon the processes of plant life of rays of light of different refrangibility, and, finally, the first description of the cell-nucleus by R. Brown. I need not attempt to carry the list through the last half-century. I have singled out these discoveries as striking landmarks, the starting points of important developments of the subject. It is enough for my purpose to show that we have always had an important school of botany in England, which has contributed at least its share to the general development of the science.

I think at the moment, however, we have little cause for anxiety. The academic chairs throughout the three kingdoms are filled, for the most part, with young enthusiastic, and well-trained men. Botany is everywhere conceded its due position as the twin branch with zoology of biological science. We owe to the enlightened administration of the Oxford University Press the possession of a journal which allows of the prompt and adequate publication of the results of laboratory research. The excellent work which is being done in every part of the botanical field has received the warm sympathy of our colleagues abroad. I need only recall to your recollection, as a striking evidence of this, the remarkable gathering of foreign botanists which will ever make the meeting of this Association at Manchester a memorable event to all of us. The reflection rises sadly to the mind that it can never be repeated. Not many months, as you know, had passed before the two most prominent figures in that happy assemblage had been removed from us by the inexorable hand of death. In Asa Gray we miss a figure which we could never admit belonged wholly to the other side of the Atlantic. In technical botany we recognised him as altogether in harmony with the methods of work and standard of excellence of our own most distinguished taxonomists. But, apart from this, he had that power of grasping large and far-reaching ideas, which, I do not doubt, would have brought him distinction in any branch of science. We owe to him the classical discussion of the facts of plant distribution in the northern hemisphere which is one of the corner-stones of modern geographical botany. He was one of the earliest of distinguished naturalists who gave his adhesion to the theory of Mr. Darwin. A man of simple and sincere piety, the doctrine of descent never presented any difficulty to him. He will remain in our memories as a figure endowed with a sweetness and elevation of character which may be compared even with that of Mr. Darwin himself.

In De Bary we seem to have suffered no less a personal loss than in the case of Gray. Though, before last year, I do not know that he had ever been in England, so many of our botanists had worked under him that his influence was widely felt amongst us. And it may be said that this was almost equally so in every part of the civilised world. His position as a teacher was in this respect probably unique, and the traditions of his method of work must permanently affect the progress of botany, and, indeed, have an even wider effect. This is not the occasion to dwell on each of his scientific achievements. It is sufficient to say that we owe to him the foundation of a rational vegetable pathology. He first grasped the true conditions of parasitism in plants, and not content with working out the complex phases of the life-history of the invading organism, he never lost sight of the conditions which permitted or inhibited its invasion. He treated the problem, whether on the side of the host or of the parasite, as a whole—as a biological problem, in fact, in the widest sense. It is this thorough grasp of the conditions of the problem that gives such a peculiar value to his last published book, the "Lecture on Bacteria," an admirable translation of which we owe to Prof. Balfour. To this I shall have again to refer. I must content myself with saying now, that in this and all his work there is that note of highest excellence which consists in lifting detail to the level of the widest generality. To a weak man this is a pitfall, in which a firm grasp of fact is lost in rash speculation. But when, as in De Bary's case, a true scientific insight is inspired by something akin to genius, the most fruitful conceptions are the result. Yet De Bary never sacrificed exactness to brilliancy, and to the inflexible love of truth which pervaded both his work and his personal intercourse we may trace the secret of the extraordinary influence which he exerted over his pupils.

SYSTEMATIC BOTANY.

As the head of one of the great national establishments of the country devoted to the cultivation of systematic botany, I need hardly apologise for devoting a few words to the present position of that branch of the science. Of its fundamental importance I have myself no manner of doubt. But as my judgment may seem in such a matter not wholly free

from bias, I may fortify myself with an opinion which can hardly be minimised in that way. The distinguished chemist, Prof. Lothar Meyer, perhaps the most brilliant worker in the field of theoretical chemistry, finds himself, like the systematic botanist, obliged to defend the position of descriptive science. And he draws his strongest argument from biology. "The physiology of plants and animals," he tells us, "requires systematic botany and zoology, together with the anatomy of the two kingdoms; each speculative science requires a rich and well-ordered material, if it is not to lose itself in empty and fruitless fantasies." No one, of course, supposes that the accumulation of plant specimens in herbaria is the mere outcome of a passion for accumulating. But to do good systematic work requires high qualities of exactitude, patience, and judgment. As I had occasion to show at the Linnean Centenary, the world is hardly sensible of the influence which the study of the subject has had on its affairs. The school of Jeremy Bentham has left an indelible mark on the social and legislative progress of our own time. Mill tells us that "the proper arrangement of a code of laws depends on the same scientific conditions as the classifications in natural history; nor could there," he adds, "be a better preparatory discipline for that important function than the principles of a natural arrangement, not only in the abstract, but in their actual application to the class of phenomena for which they were first elaborated, and which are still the best school for learning their use." He further tells us that of this Jeremy Bentham was perfectly aware, and that his "Fragment on Government" contains clear and just views on the meaning of a natural arrangement which reflect directly the influence of Linnæus and Jussieu. Mill himself possessed a competent knowledge of systematic botany, and therefore was well able to judge of its intellectual value. For my part, I do not doubt that precisely the same qualifications of mind which made Jeremy Bentham a great jurist, enabled his nephew to attain the eminence he reached as a botanist. As a mere matter of mental gymnastic, taxonomic science will hold its own with any pursuit. And, of course, what I say of botany is no less true of other branches of natural history. Mr. Darwin devoted eight or nine years to the systematic study of the Cirripedia. "No one," he himself tells us, "has a right to examine the question of species who has not minutely described many." And Mr. Huxley has pointed out, in the admirable memoir of Mr. Darwin which he has prepared for the Royal Society, that "the acquirement of an intimate and practical knowledge of the process of species-making. . ." was "of no less importance to the author of the 'Origin of Species' than was the bearing of the Cirripede work upon the principles of a natural classification."

At present the outlook for systematic botany is somewhat discouraging. France, Germany, and Austria no longer possess anything like a school in the subject, though they still supply able and distinguished workers. That these are, however, few, may be judged from the fact that it is difficult to fill the place of the lamented Eichler in the direction of the Botanic Garden and Herbarium at Berlin. Outside our own country, Switzerland is the most important seat of general systematic study, to which three generations of De Candolles have devoted themselves. The most active centres of work at the moment are, however, to be found in our own country, in the United States, and in Russia. And the reason is, in each case, no doubt the same. The enormous area of the earth's surface over which each country holds sway brings to them a vast amount of material which peremptorily demands discussion.

No country, however, affords such admirable facilities for work in systematic botany as are now to be found in London. The Linnean Society possesses the Herbarium of Linnæus; the Botanical Department of the British Museum is rich in the collections of the older botanists; while at Kew we have a constantly increasing assemblage of material, either the results of travel and expeditions, or the contributions of correspondents in different parts of the Empire. A very large proportion of this has been worked up. But I am painfully impressed with the fact that the total of our available workers bears but a small proportion to the labour ready to their hands.

This is the more a matter of concern, because for the few official posts which are open to botanists at home or abroad a practical knowledge of systematic botany is really indispensable. For suitable candidates for these one naturally looks to the Universities. And so far, I am sorry to say, in great measure one looks in vain. It would be, no doubt, a great impulse to what is undoubtedly an important branch of national scientific work if Fellowships could occasionally be given to men who showed some aptitude for it. But these should not be mere prizes for undergraduate study, but should exact some guarantee that during the tenure of the Fellowship the holder would seriously devote himself to some definite piece of work. At present, undoubtedly, the younger generation of botanists show a disposition to turn aside to those fields in which more brilliant and more immediate results can be attained. Their neglect of systematic botany brings to some extent its own Nemesis. A first principle of systematic botany is that a name should denote a definite and ascertainable species of plant. But in physiological literature you will find that the importance of this is entirely overlooked. Names are employed which are not to be found in the books, or they are altogether misapplied. I call to mind the case of an English physiologist who wrote a highly ingenious paper on the movement of water in plants. He was content to refer to the plant upon which he experimented as the "Bay Laurel." I ascertained that the plant he really used was the Cherry Laurel. Now the Bay is truly a Laurel, while the Cherry Laurel is a Plum. Anyone repeating his experiments would therefore be led wholly astray. But if proper precautions are taken to ascertain the accurate botanical name of a plant, no botanist throughout the civilised world is at a loss to identify it.

GEOGRAPHICAL BOTANY.

But precision in nomenclature is only the necessary apparatus of the subject. The data of systematic botany, when properly discussed, lend themselves to very important generalisations. Perhaps those which are yielded by the study of geographical distribution are of the most general interest. The mantle of vegetation which covers the surface of the earth, if only we could rightly unravel its texture, would tell us a good deal about geological history. The study of geographical distribution, rightly handled, affords an independent line of attack upon the problem of the past distribution of land and sea. It would probably never afford sufficient data for a complete independent solution of the problem; but it must always be extremely useful as a check upon other methods. Here, however, we are embarrassed by the enormous amount of work which has yet to be accomplished. And unfortunately this is not of a kind which can be indefinitely postponed. The old terrestrial order is fast passing away before our eyes. Everywhere the primitive vegetation is disappearing as more and more of the earth's surface is brought into cultivation, or, at any rate denuded of its forests.

(To be continued.)

ERICA ALPORTI.

This Heath is just now the prettiest plant in the garden, for it is a mass of its rich dark crimson flowers. It does not grow so rapidly as some, but it is one of the best for the rock garden where a sunny, open position can be given it. Peat is evidently not necessary for these plants; they grow here luxuriantly in loam. Erica vagans rubra grows rapidly, and soon attains a large size. Some plants not a foot over them three years ago are now fully 3 feet in diameter. This variety is flowering better with us than it has done before. Many of its spikes are 9 inches in length, although all the flowers are not yet open. The white form of this variety does not grow so strongly, but it is a grand companion to it, and to make large bushes only requires two or three plants placed together instead of planting them singly. It is to be deplored that beds of these beautiful Ericas are not more generally seen in suitable positions in pleasure grounds. A few plants of each variety together soon form conspicuous clumps if the centre plants are raised by the aid of a few stones. E. Alporti would certainly give more trouble in keeping it well furnished at the base than some other varieties, for it is of upright growth and liable to become bare at the base, but, in spite of this, it is perhaps the most charming of all.—B., *Liverpool.*

BRENTWOOD SHOW.

The autumn Show and Exhibition of farmers' and cottagers' produce was held on Thursday last, September 20th, under most favourable conditions, the weather being all that could be desired. Special prizes for cottagers were given by the tradesmen of Brentwood. Ploughing prizes by Mr. Beadel, M.P. Owing, however, to the lateness of the season this competition was postponed for a fortnight. Long servitude for farm servants by the President, Mr. E. Ind, and Lady Guise offered similar prizes to domestic servants. Added to this a fire brigade competition and a display of fireworks rendered additional attractions. The entries numbered about 700. Messrs. Cheal & Sons of Crawley, Sussex, exhibited, not for competition, a fine collection of Dahlias single, Cactus, and Pompon, the most notable of the singles being Victoria, a dark crimson variety with white band down centre of each petal; Mr. Rose, Alphonso, Formosa, and Mr. Kennett; Pompons—Iolanthe, E. F. Junker, Darkness, and Isabel. The same firm also exhibited a collection of Apples, Pears, and Plums. In the open class for twenty-four Dahlias, distinct, Mr. Keith of Cornwalls, Brentwood, was first, closely followed by Messrs. Saltmarsh & Sons, Chelmsford. For twelve Dahlias, amateurs, Mr. Keith and Mr. Harris for first and second. For six Dahlias, Mr.Ocock, gardener to Mrs. McIntosh, Havering Park, was first, and Mr. Tunbridge second. For twelve Dahlias, special prizes offered by Messrs. Rawlings Bros., Romford, Messrs. Keith, Ocock, and Tunbridge were placed in the order named. There was a good display

of Roses considering the lateness of the season. For twenty four Roses, distinct, open, the Rev. J. H. Pemberton was first, Mr. Frank Cant second. For twelve Roses, distinct, amateurs, the Rev. J.H. Pemberton was first, and Mr. Wallis, Cornsland, Brentwood, was second. For six distinct, Mr. Nairn of Romford was first, an equal second being awarded to Messrs. Charter and Atkinson of Brentwood. Fruit was exhibited in good condition by Mr. Ocock, Mr. F. Brown, and Mr. Tunbridge; Mr. Ocock also showing a fine collection of vegetables. A great feature of the Show was the fine display and keen competition in the cottagers' classes, two large tents being well filled. As an example may be mentioned the class for collection of vegetables, six varieties, for which three prizes were offered; here there were eleven competitors, all showing such good baskets that one regretted no one had taken the place of the late Countess Tasker, who was accustomed to award extra prizes when the competition was keen and the exhibits up to the mark. This was not the only class in which the competition was severe; for instance, in that for a collection of four sorts of vegetables there were ten competitors, for kidney Potatoes twenty-two, for twelve Onions twenty, for the best dish of boiled Potatoes twenty-four, and for nosegay of wild flowers by children twenty-nine competitors. These are only some of many other classes filled in like manner. The Society is to be congratulated upon the success of the Show, especially in the cottagers' division, and it is hoped that some ladies and gentlemen of the neighbourhood, following the good example already mentioned, will place it in the power of the Committee to make extra awards should the exhibits deserve it, as they certainly did last Thursday.



FRUIT FORCING.

Peaches and Nectarines.—*Unsatisfactory Trees.*—Where the trees cast their buds, do not set well, swell irregularly, stone badly, and finish their crops unsatisfactorily, then something is wrong. If the disaster is not attributable to errors in the treatment, something is amiss with the roots. Either they are in unsuitable material, it is too rich or loose, too deep or imperfectly drained. Trees not in a satisfactory condition, and it not being attributable to bad treatment, should as soon as the wood is mature be partially or wholly lifted. If this be done whilst the trees are in leaf the house should be shaded before commencing operations, and the old border made thoroughly moist. In removing the old soil commence at the point most distant, and work towards the trees, and when it has been cleared away the exposed roots should be drawn aside, damped, and covered with mats whilst the drainage is being attended to. This should consist of 9 to 12 inches thickness of rubble, largest at the bottom and smallest at the top, and if a covering be placed on of chalk the size of road mettle, or the rough of old mortar rubbish not passing a sieve with a three-quarter inch mesh, it will make all secure and be a source of calcareous matter. If the site be wet it may be necessary to concrete the bottom below the drainage; in any case there must be drains beneath the drainage, the bottom sloping to carry off all water, and it must have proper fall and outlet. Strong loam is most suitable. If inclined to be light add a fourth of clay marl as fine as practicable; if very strong add a fourth of road scrapings, and in any case a tenth of chalk or old mortar rubbish freed of laths or other pieces of wood. Crushed steamed bones may also be added to the extent of a twentieth part, and a similar proportion of wood ashes, the whole well incorporated, and as put in the border rammed firmly, and the roots, after having any strong fibreless portions shortened with a knife, must be spread out evenly over the bed, covering them with soil as they are laid out, and give a good watering. The roots should, as far as practicable, be laid in the top foot of soil. The border need not be deeper than 24 inches, and in no case wider than the width or height of the trellis. The shading must remain on if the weather be bright, and afford ventilation by the top lights only, syringing the foliage morning and afternoon until it is seen that the roots are working in the fresh compost, when the shading may be removed and the house opened. Trees so treated rarely cast their buds, the flowers set well; indeed the operation of lifting is very commendable in many ways, but is little practised. Trees in good health will not require lifting, but it is a good practice, especially for old trees, to remove some of the soil from the surface and supply fresh compost, as the roots will benefit by it, adding to their vigour and the size and quality of the fruit produced.

Late Houses.—When the fruit has been gathered, as will be the case where there are midseason varieties, the next important object is to secure the ripening of the wood. This can best be done by thinning unnecessary shoots in addition to those that have borne fruit, the latter being cut out to a successional shoot at the base, and the former being thinned wherever overcrowded. In the case of strong vigorous trees it may be necessary to accelerate the ripening of the wood by gentle fire heat, especially in dull weather, at the same time admitting air freely. Some of the late Peaches, as Desse Tardive, Walburton Admirable, Sea Eagle, &c., in cold localities will require gentle fire heat to ripen them thoroughly. An occasional syringing will be necessary for trees from which the fruit has been gathered.

Cucumbers.—Liberal treatment is essential to obtain and maintain a strong growth in the plants for autumn fruiting, as much of the after success depends on the foundation now laid. Remove all staminate flowers and tendrils, avoiding overcropping, and be careful not to allow the fruits to hang too long upon the plants. Gradually reduce the atmospheric moisture as the days shorten, and employ the syringe only on bright warm afternoons. Earth up the roots from time to time, pinching out the growing points of the shoots about every week or ten days, reserving as much foliage only as will admit of its exposure to light and growth to ensure a succession of fruit. The water supplied should be about the same temperature as the bed.

The plants for winter fruiting must be in their places about the middle of October to ensure a good supply at Christmas. Keep them near the glass to ensure sturdy growth, not allowing them to become root-bound. See that the fermenting material is in due course of preparation if any is to be employed for bottom heat, and make certain of the heating apparatus being in thorough order. A bottom heat of 85° to 90° will be safe, but the latter temperature should not be exceeded; if from hot-water pipes a bottom heat of 80° to 85° is sufficient. As there are many failures with winter Cucumbers from disease it will be advisable to take extra precautions in the way of thorough cleanliness and choice of soil. Turfy loam of a rather light nature is best, cut about 3 inches thick with the turf, and this baked in an oven or over a fire, being careful not to bake it to a cinder, but only sufficiently to destroy fungoid and nematoid germs, a temperature of 212° being ample, but this will not prevent attacks of the plants by nematoids, which result of continuance by seed or otherwise of a diseased parent, as it is inherent in the progeny. About a third of old mortar rubbish may be added, especially if there is a tendency in the loam to produce gumming in the plants and fruit, and this more particularly applies when the loam is of a very fibrous or peaty nature. If the loam be rather heavy add grit or road drift, and put it together rather firmly so as to induce a sturdy growth. Manure is best given at the surface as a mulch or in liquid form.

Melons.—Cankered and cracked fruit are most frequent during cold and wet weather. The best practice is to keep both the soil and atmosphere dry, and for canker fresh slaked lime well rubbed into the affected parts. Cease syringing the foliage, and supply water at the roots to prevent flagging, but no more. Remove all superfluous growths. The late fruits are swelling and must be supported. Maintain a night temperature of 65°, and 70° to 75° by day artificially, closing the house early in the afternoon, keeping through the day at 80° to 90° from sun heat.

After this time cease applying water to plants in dung-heated pits and frames, a dry condition at the roots will accelerate the ripening process. Any fruits that have finished swelling, or plants that are dying, should be cut with a good portion of stem and placed in a dry warm house to ripen.

THE FLOWER GARDEN.

Flower Beds.—These have been more attractive during September than at any time previous, both the fine-foliaged and flowering plants improving surprisingly under the influence of dry weather and warmth. The tuberous Begonias have fairly eclipsed everything, and they promise to be very gay till frosts cut them down. In some instances, or where there are a few isolated beds of Begonias, Aster, Zinnias, Stocks, and other plants that are later than usual in flowering, it is advisable to protect them in some way so as to prolong their beauty and usefulness. Carpet beds, when not forming part of a general arrangement—that is to say, when not mixed with various other beds, ought also to be protected as much as possible from heavy rains and during cold frosty nights. Close canvas stretched over the beds and securely fastened to stout short stakes forms the best covering, but frigi domo or cotton blinds, such as are used for covering outside wall trees, mats, or some other substitute, would also be better than no protection at all. In every case the coverings ought to be securely fastened well above the plants, or otherwise a storm of wind and rain will cause them to do much more harm than good to the flowers underneath.

Late Propagation.—Owing to the rather late flowering of the Zonal Pelargoniums especially, many owners were averse to the requisite number of cuttings being taken from them, thus disfiguring the beds somewhat. As a consequence late propagation must be resorted to, or otherwise there will be a scarcity of strong plants next spring. Carefully treated, and cuttings not actually damaged by frosts, may be struck and safely wintered, these proving superior to the bulk of those struck in the spring. All should have most of the old leaves and scales trimmed off them, and after being well dried, be dibbled round the sides of 4-inch or rather smaller pots. These to be set on shelves suspended in dry Peach houses, vineries, or in any dry light position, where a little fire heat is turned on in wet cold weather. No water should be given for several days, and at no time during the winter ought they to have more than enough to prevent shrivelling. Keep all Pelargonium cuttings free of decaying leaves and on the dry side, it being undesirable to encourage growth at this time of year. Uninjured tops of young shoots of Heliotropes, Verbenas, Ageratums, Petunias, Marguerites, Iresines, Coleuses, and Alternantheras may yet be struck in gentle heat. They ought to be kept rather close, sufficient air being given every morning to well dry the frames in which they are set, or otherwise wholesale damping off will result. Young plants are, in most instances,

preferable to old plants potted up from the ground, but the latter ought at once to be secured if the former are scarce. Carefully lifted, not too much of the heavy garden soil with them, and kept in a rather shady yet warm position, many of these old plants will survive and give a quantity of cuttings early next spring.

Calceolarias, Violas, and Gazanias.—Plenty of good cuttings of these can usually be had early in October, and that is the best time to propagate. Struck much earlier they are apt to grow too strongly and be less hardy in consequence, while if not taken off before frosts injure them many of the cuttings will fail to strike. No heat whatever is needed for them, in fact they do much better without it. Cold frames and shallow pits are the best form of covering for them. The former should be set on a dry bottom, and in either these or pits place sufficient half-rotten heating material, such as leaves and stable manure, to bring the soil placed on the top of this well up to the glass. About 4 inches of light loamy soil should be levelled over the manure, on the top of this being placed 2 inches of compost consisting of equal parts of fine loam and sifted leaf soil with a liberal addition of sharp sand, patting this down firmly with the back of the spade. In the case of shrubby Calceolarias the best cuttings are made from the medium-sized flowerless shoots now very abundant. These should be shortened to a length of about 3 inches, cut to a joint and dibbled in 3 inches apart each way before they flag badly. Flowering tops of Violas may be struck, and will eventually form good plants, but the preference ought to be given to the young shoots that start from the stem of the old plants. These need very little preparation, and may be dibbled in more thickly than the Calceolarias. Short tops of Gazanias to be made into cuttings and treated similarly to Calceolarias. The cuttings in every instance must touch the bottom of the holes made with the dibber, and be further fixed with the point of the latter. All to be watered in, be kept rather closely covered in the daytime, and be shaded from bright sunshine. In mild dull weather a pinch of air may be given, especially during the night time, the aim being to keep the cuttings from damping off and to check premature top growth.

Planting Bulbs.—Those intended for the flower beds cannot yet be planted, but in all cases where the bulbs can be planted at once this should be done. Especially is it necessary to plant the home-grown bulbs of Lilium candidum, Narcissi in variety, and notably the Pheasant Eye, and the double form of it, as these when received have usually commenced root action. It is always the wisest plan to put out hardy flowering bulbs generally in clumps where they can be properly taken care of, and not disturbed for several years. They are very fit plants for mixed borders, and if properly arranged will give a very serviceable display of flowers without greatly interfering with the space required for summer flowering plants. Irises in variety, Fritillarias, Leucojums, Triteleias, Anemones in great variety, Hyacinths, Narcissi and Daffodils, Tulips, Crocuses, Scillas, Snowdrops, and the hardy Lachenalias improve rather than deteriorate from being left in the ground, and ought to be ordered and planted at once. In the course of three or four seasons strong clumps will have formed where only three or four bulbs were planted, and these may be lifted, divided, and replanted at any time during the autumn or early spring months. The beautiful Ranunculus are not so hardy as those just named, and these must be kept out of the ground till November, and even later in cold damp localities.

PLANT HOUSES.

Eucharis grandiflora.—If any of the plants need potting or it is necessary to increase the stock by division, this is a very good time to do it. After shaking the soil from their roots, keep them close and shaded for ten days, and they will commence to root afresh in the new soil. The pots should be liberally drained, as these plants dislike stagnant water or sour soil about their roots. They enjoy liberal supplies of water, but the soil must be sweet and open. The plants will pass the winter much better with sweet fresh soil in which to root than if it was approaching a sour exhausted condition. Eucharises frequently flower at this season of the year, and those that have not flowered should be kept until they have done so. It is a mistake where a long succession of bloom is required to disturb the whole of the stock at the same time. They should be divided into batches, so that repotting can be done without throwing quantities of them into flower at a time when they may not be wanted. Water carefully after potting, never allow the plants to become dry, and on the other hand do not overwater them. Eucharises are frequently given too much water, especially during the winter, and the result is that in spring they are almost rootless.

Stephanotis floribunda.—Plants that are intended to flower early should have no artificial heat for at least a month. On fine bright days admit abundance of air. Discontinue syringing, as the atmosphere of the structure must be drier than has been the case up to the present time. This will bring growth to a standstill and harden and ripen the wood. The plants will then be in grand condition for pruning and to enjoy a season of complete rest. After pruning, and during the resting period, every attempt should be made to destroy mealy bug if the plant is infested. The plant should be pruned as it is taken from the trellis, and then washed in a strong solution of softsoap and water in a tank. Nail brushes may be used to remove any small bug that may have deposited itself in the axils of the leaves. Wash the house, and if there is much bug about, the wires and every available space should be painted with petroleum. The plant should then be thoroughly syringed while it is down with one ounce of the oil in each gallon of the water, being careful to get at every portion of it. After the plant has laid for an hour or so shake it well, as the oil might settle upon the lower portion and destroy some of the branches. The plant should then be trained thinly over the roof, and syringed again with the same solution, repeated at intervals of a month until the flowering time. A large plant subjected to this treatment has given us no trouble this year to keep it thoroughly clean.

Poinsettias.—These must be removed from cold frames without delay and placed in a light structure where a night temperature of 55° to 60° can be maintained. The latter will not hurt them provided liberal ventilation is given during fine days. Directly the plants commence showing their bracts or the completion of their growth, the temperature may be raised 5°. Clean the houses thoroughly before these and other winter flowering plants are placed in them. Plumbagos, Linums, Centropogons, and Euphorbias must also be removed from cold frames. Be careful not to keep any of these too warm to excite them into fresh growth.

Crotons.—Those for decoration that are highly coloured must be prevented making fresh growth. This can be accomplished by placing them in cooler quarters and admitting more air during the day. Crotons will bear without injury a night temperature of 55°, and if they are not kept too warm during the day they will remain in excellent condition until they are wanted. The decorative value of Crotons is often destroyed by growth made in autumn, which it is impossible to colour.

THE BEE-KEEPER.

NOTES ON BEES.

It may be worth remarking that while in many places the rain only drizzled, here during the months of July, August, and part of September it fell in torrents, the drops being of immense size. Late as the season is a continuance of fine weather may favour the bees, and a few more pounds of honey may still be gathered. Good hives, it is said, have risen in weight 30 lbs., but I have not seen them since the middle of August. On the 10th of September a number of Carniolian queens came by post from Austria, which have superseded the same number of unfertilised ones in nuclei. An examination of these proved that only one had commenced to lay at about ten weeks old, while older ones had not. This one, unfertilised as she was, had previously been subjected to rough treatment by the bees. Twice I released her from being killed when outside, a common occurrence when fertilisation is delayed. The brood of this queen presented a peculiar appearance, being very rugged, more so than is usually the case, and some of the cells appeared extra large, two bees in one cell. On opening one of them two well advanced pupæ were in one cell. Amongst the varied phenomena of the hive it is the first of the kind I have either heard of or seen, nor have I ever witnessed either malformed or monstrosities amongst bees other than hermaphrodites. These latter are sometimes interesting, especially so to the scientist. Why bees are exempt from producing mature malformed bees like many other animals may, perhaps, be due to their perfect knowledge of the ulterior uselessness, or otherwise, of any malformed larva found in the unsealed cell, but why do they allow hermaphrodites to become fully developed is matter for reflection. At a later date I will examine this brood, as it appears the bees, although supplied with a fertile queen, have retained all the drone brood, much of it being now near the hatching.

Usually when bees have a fertile queen introduced, superseding a drone-breeding one, the bees destroy the drone brood. It appears, however, that in this as in other things the Carniolian bee differs from other varieties. When bees of the common kind lose their queen they shortly thereafter make a great commotion, usually near dusk, which gives the bee-keeper notice that the hive is queenless. The Carniolians appear to act differently in this respect, indicating queenlessness by fanning at the entrance, and humming loudly, just as bees do when they have been fed or getting honey in abundance. This difference makes it more difficult to distinguish queenless hives by appearance. Another trait in their character is they take more readily to a strange queen than some varieties do, so much so indeed that I believe that in many cases an alien queen might be introduced safely in ten minutes after the deposition of

the original one. I have introduced many queens to these bees and found every lot of the same nature.

When these bees are pure they are grand workers and have otherwise all the good qualities desirable in bees, and if we overlook their friskiness at swarming time are otherwise faultless. And when their mild temper (although not stingless) is taken into consideration they are unsurpassed, and no other variety can be compared with them.

A DAY'S OUTING.

One day lately a letter came from a friend asking me to visit him and others, and advise the best plan to prepare different hives for winter. Their plan was to drive and join two together. After making an examination I found every hive well filled, and there was no necessity whatever for further strengthening any one of them. The honey that could be taken was but little, for already an octagon super tolerably well filled had been taken from each hive, for which I was informed 2s. 6d. per pound would be readily obtained. Their mode of marketing being after the fashion I have frequently spoken on—viz., they hand it over to a grocer, and he sells it at the price named by the owner, a small per-centage being allowed for the trouble. After I had satisfied myself as to the actual condition of all the hives, and seeing no necessity for more bees, nor that any good could arise from joining two together, I explained the whole matter, and advised feeding those hives requiring it, and probably when the spring came round there would be a demand for bees, as many had died during this summer. An outlay of from 3s. to 4s. was all that was necessary to make them worth six or seven times more by May next. Now came the important reply to what I said from a bee-keeper of the first year. "I agree with what you say, but the number of hives I can keep is limited, then if there was no demand in the spring there would likely be as little demand in the autumn. It appears to me that the 'brimstone pit' is the best way to dispose of surplus bees after all that has been said against it." In that statement I concurred, but added that there ways and methods of getting over the difficulty and avoiding the pit, although no writer on bees had as yet shown the way to rescue the innocents. Successful bee-keeping to many of them consisted in manipulation and increase of stocks, which if performed in a humane and intelligent manner would result in the country being overflown with bees, but this has never been the case, and the number of slaughtered bees from other causes has been greater of late than the brimstone pit ever caused. Just as the Stewarton system of bee-keeping has given supers of honey this year when others failed, as I have frequently shown it could do, although condemned by most of our modern bee-men, until lately when they could not do so conscientiously any longer, so will I endeavour now to show how bees can be kept with the greatest amount of profit without having many surplus bees, and none to subject to brimstone. Before doing so, however, I may state that in addition to the octagon supers stated above I hear of many others, and in one case in the East of Scotland 50 lbs. surplus has been taken from each Stewarton hive.

HOW TO MAKE THE MOST OF BEES.

Take any given number, say six stocks; the bee-keeper having no desire to increase nor to have "condemned bees." Allowing these six stocks to swarm there would be twelve in all; but the six swarms are combined into three, leaving still three in excess. To still further reduce these drive all the adult bees from one half, then combine these three hives with the other three. This reduces to the proper number—six, which, if three of the six swarms queens have been spared, may be joined to the old stock it issued from after the queen cells have all been destroyed. Six extra strong hives will now be the result, and three of them prodigious ones; but none of these having young queens it will be as well to divide one of the old stocks into six or seven nuclei. After these have been duly fertilised and breeding for some time overhaul the first named, depose their queens, and join nuclei in the usual manner, but not before removing excess of drone comb and what sealed honey ones that can be spared to make room for combs of the nuclei. The total number is now reduced to six again, and every one is in the very best condition for stocks the coming year, or for the approaching Heather harvest; and if the Clover harvest has been one of sunshine the yield will be something great, as will also be the six stocks, as they have the brood of two queens; so that in addition to having the bees of one queen only, which in itself would be a populous hive, there is the nucleus extra, and its young queen should gather double the quantity of honey than any hive not similiarly treated. Should an increase of stock be desired there is no better plan than that of dividing into nuclei after the issue of the first swarm, and if my instructions previously given are followed there will be but few condemned or surplus bees, and no brimstone pit, with the largest yield of honey that possibly can be secured.

A young queen at the head of each stock about the 20th of July, swarming is not so liable to take place, but to avoid that it may be necessary to add an extra division underneath the usual body boxes. I have had similarly treated hives gather 20 lbs. honey daily during the glut. By pursuing the above plan we get the greatest number of bees at the right time, and there is an end to all bother after the surplus honey has been secured, and by using the carbolicised paper, the removing of the supers is but the work of a few minutes, without the risk of starting robbing, or getting supers spoiled by the bees breaking the seals of the honeycomb, as is usually the case when the supers are removed during a dearth of honey. The Americans seem not to understand this easy mode of removing supers, as they are only discussing the subject which is the best way to remove, not knowing the easy method of—

A Lanarkshire Bee-keeper.

THE COMBINATION OR LONG-IDEA HIVE.

Several have been inquiring about this hive lately, and as I have had over thirty of them nearly always in use for seven years, I should be able to discuss their merits and defects. The principle of the hive dates long back, but it was first brought prominently before modern bee-keepers by Captain Adair in the United States; bee-keepers there lost their heads over it, and began calling it the "Long-Idea" hive. This was some time before it was "originated" here. The best feature about this hive is it can be made from almost any kind of packing box that happens to be large enough; and under the name of the Excelsior hive some years ago I gave directions in another journal that enabled anyone who could drive a nail or cut a piece of wood to make them. This feature is the only advantage it has over other good types. Comparing it with the Cowan types, it has the advantage of contraction to any comb, or the expansion longitudinally to any number, limited, of course, to the length of the hive. It is solely on account of this peculiarity, erroneously supposed to be an advantage, that this type of hive has become so popular, particularly amongst those who think continuous manipulation the proper way to manage a stock of bees. "Lanarkshire Bee-keeper" describes it as the best non-swarming hive, as nearly all the bees have died in them this summer. Allow me to remark that it was not the hive which caused the bees to die, it was this manipulation. Being so handy for the purpose, its owner is for ever pulling the combs about, spreading the brood, and chilling it. When he has done the bees have to rechink the dummy to stop the draughts, and get up the heat internally; this means a waste of stores and energy, when in a season like the past they were bound to starve, while other stocks, kept as compact as possible without being disturbed, prospered.

One great drawback to the system is the brood is spread out flat instead of being square or round on the base, and rising upwards in a natural manner as in the Stewarton system. Many think this an advantage, and if there was any truth in the teaching "that shallow hives were best for comb honey," this hive should give a splendid return if headed with an extra prolific queen, but as a matter of fact storified hives with deep broad nests have always outstripped it in this respect.

When it was introduced it was claimed as a fact fully established, that bees would invariably store their honey in the farthest point from the entrance, hence they would always store their honey in the back combs, which could be taken out, extracted, and returned without touching or moving the others. My seven years' experience proves to me that bees invariably place their ripe honey above the brood, and that I was just as likely to find the front combs filled with honey as the back ones. This, it will be seen, involved much labour. During a good honey flow I have always found the combs sealed above, and the brood gradually crowded down to the bottom, even with plenty of room behind, so that very rarely indeed did I get combs to extract free from brood. Up to this time I had always looked upon the storifying system

with horror. I could not see how bees could be kept from "boiling out" from the divisions in anger, and how to quiet them seemed an unsolved problem; for though "Lanarkshire" and other Scotch authorities spoke often of lifting a super up and putting another under, no one has ever explained, to my knowledge, how with both hands holding a super, say 30 lbs. weight, he kept the bees quiet in both super and stock. With this idea I decided to limit the brood frames in my long hives to about a cube, and place supers on the top, intending to work them from above as before. I was not long in noticing that the bees improved more rapidly in strength, more honey was stored in these supers than other stocks equally strong stored in unsupered long hives, and to my bewilderment they began to show signs of requiring more room. With a cluster of bees hanging from the entrance as big as a bucket, the super full too, and the stock crossed Syrians, and rather cross, I quite expected a lively time over putting that other super under the other. I decided that smoke or carbolic acid was out of the question till the work was done. I arranged my empty super, then I lifted the full one off, covered with the quilt, set it on the top, and then set the two on the top of the brood frames as quickly as possible. I never felt so surprised as to see the bees really frightened instead of angry, and not one took wing. This experience inspired me with confidence to do others likewise. I now began to see the beauty of the storifying or Stewarton system, and since then I have quite tested it, and I have always found that if a super is lifted off, covered with the quilt or other cover, the bees are more frightened both in the super and the hive below than they can possibly be by any other means. There is no "boiling out," and not a bee need be crushed. I am rather surprised those who have practised the Stewarton system have not made frequent notice of this. They have talked often enough about doing it, but never explained how easy it was, and I must candidly confess I never could regard it as a simple matter. I have lifted thousands of skep hives off their stands, and opened many more moveable comb hives from above, and I always have found bees ready to resent abrupt interference. So singular is this, I have been trying to think of a natural solution. Here is the way I explain it. It is natural for a hive to be turned over by a bear or other animal, or disturbed from the top, hence they are always ready for attack from these places, but to be suddenly divided in the middle of their home is not natural, and puts them in the greatest fright.

Speaking of the storifying system, a writer says in another journal "That we have to pull the whole pile down to get at the bottom combs." To show how far he is from the truth let us imagine a stock piled up ten storeys high and we want the middle comb out of any one, say the bottom one; well, all we have to do is to lift off the nine top storeys at once, and we are at it in a moment. More than this, if we wish to know how they are going on in the middle—say to see if the young queen is laying, or if queen cells are being formed, we just turn up the upper storeys and see. No need of smoke, as the bees at once run to the honey to fill themselves, leaving the bottom edges of the combs bare. As the principle for a migratory bee hive it seems to be just the thing, as all superfluous storeys can be left at home.

It is when we use the longitudinal hive for migratory purposes that we understand and comprehend the meaning of its name, "Combination Hive." We are bound to take more hives than the bees require; this adds weight in lifting, loading, packing, and carriage; it makes the hives even difficult to pack on drays for safe riding. Then there is the packing up; probably the dummy has shrunk, and the hive walls expanded through wet, or the floor board has warped a little; and if so there is a job of caulking the crevices with rags and the screw-driver to keep in the bees. And when all have been carefully done the chances are that bees will be found escaping in at least three out of every twenty as soon as the dray begins to move. Its name is very appropriate, as it combines the maximum of trouble and expense with the minimum of returns.

This is what I am convinced of much against my will. I have not found placing the frames across the entrance to make the least difference, either in winter or summer, so long as the queen was well bred; but it is easier to get ill-bred queens in these hives than good ones, hence the apparent difference by those who have tested the two systems, right-angled combs v. crossways combs to entrance.

Allow me in conclusion to point out that in a few years every bee-keeper will send his bees to the Heather; that being so, the one who is thinking of buying a hive will be wise to look round for one adapted for migratory purposes. Certain it is the necessary qualities will not be found in the "Combination" or "Long Idea" type.—A HALLAMSHIRE BEE-KEEPER.

BEES.—A QUERY.—Can any of your bee-keeping readers say whether single Dahlia blossoms are injurious to bees? I have heard they are very bad for bees. I have quantities of Dahlias and Tritomas, and the blossoms are always full of bees.—MILWARD, *Lavistown, Kilkenny.*

INTRODUCING QUEENS BY THE HALLAMSHIRE LAW.

I AGREE with "Felix" that the past season has been a poor one for queen-rearing, and one that has been unfit for much manipulation; but I feel disappointed that he has not thoroughly tested the Hallamshire law; and as the time is near when it may be tried by exchanging every queen in one's apiary, I will undertake to replace every queen he loses in making the experiments. Each queen shall be bred in 1888 or 1887. Also, should anyone desire to test the law, and loses a queen over it, I will undertake to furnish a queen, as above, for each one lost in strictly obeying the rules laid down in the Hallamshire law.

NOTE.—The authorities (?) say it is next to impossible to introduce queens in the fall.—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Lambert & Reiter, Trèves.—*General Catalogue.*

L. Späth, Berlin.—*General Catalogue.*

Webb & Sons, Wordsley, Stourbridge.—*Catalogue of Selected Seed Corn, 1888-1889.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Tea Roses (*T. W.*).—The information you require will appear in an early issue of this Journal. You will be able to grow them readily as you suggest.

Mushroom Spawn (*T. R.*).—It appears to be good spawn. You cannot do better than follow the instructions you have already received; the information in the book is thoroughly reliable.

Ferns in Case (*E. D.*).—Too much light and too little ventilation will make the fronds turn brown. Our Fern case never has the sun shining upon it, and has the sides slightly open all the day and night.

Mildew (*Anxious*).—Probably the other plants will be affected also, and the best plan would be to remove those already attacked if it is convenient to do so. You do not say what plants you have, nor where they are growing.

Cracked Pears (*G. J. S. and W. M.*).—The cracking of fruit has been unusually prevalent this season, and is no doubt due to the continuous rainfall. There is no remedy for injury already done, and it is to be hoped that another season the weather may be more favourable.

Cost of Preparing Land and Planting Fruit Trees (*G. M.*)—The cost of trees for an acre of land obviously depends on the kinds and numbers intended to be planted. Mr. Rivers, in his Conference paper, states the number of trees of different kinds for planting a rood of land (see page 235), and their cost can be obtained from catalogues. In the same paper the cost of preparing land for their reception is also given by the rod and rood, and you can easily calculate the amount per acre on the data there given.

Beans in Pods (*J. W.*).—The old story of Beans "growing wrong end upwards in pods this year" is repeated every season, but no samples are sent. When the pods point upwards the eyes of the Beans are naturally in the same direction, and when the pods hang down the eyes look down too; but they are quite right all the same, just as those of their observers are, whether they turn them upwards to the sky or downwards to the earth. The pods of some varieties grow more or less erect, while others as naturally hang down to a greater or less extent, the drooping tendency increasing with age; but there is nothing unnatural or abnormal about any that have come under our observation.

Edging Plants (*W. R. S.*).—The following are good edging plants:—Ajuga reptans rubra, dark purple leaves; Arabis alpina variegata aurea, Aubrietia purpurea variegata, Cerastium tomentosum, Euonymus radicans variegatus, Iberis semperflorens fol. var., Sedum acre variegata, Sempervivum californicum, Stachys lanata, Stellaria graminea aurea, and Thymus citriodorus aureus, all of which are hardy. The following are more or less tender:—Iresine Lindeni, Peristrophe angustifolia aureo-variegata, Sedum Sieboldi medio-picta, Mesembryanthemum cordifolium variegatum, Gnaphalium lanatum, Leucophyton Browni, Alternantheras, Echeveria secunda glauca, E. pumila, Alyssum variegatum, with Lobelias and Golden Feather Pyrethrum.

Trees for Screen on the Seacoast (*M. S.*).—There is no evergreen tree so suitable as Pinus austriaca, and it is equally serviceable inland, thriving in the bleakest situations and at high altitudes. We should plant a good width of Pinus austriaca near the sea, then an inner one of Sycamore, having Holly for undergrowth, which should be planted so that the Sycamores will ultimately be 24 feet apart every way, and the Hollies 12 feet, planting the Hollies at those distances apart in the first instance, and the Sycamores 4 feet. Inside you can have most kinds of deciduous trees and shrubs, also evergreens, Conifers doing remarkably well.

Ventilating a Conservatory (*R. O. S.*).—The system of ventilation requires to be the same both in summer and winter—viz., air should in the first instance be admitted by the top lights, but the time of doing so will entirely depend upon the temperature and the time of year. In the winter season, or from October to March inclusive, commence ventilating by the top lights when the temperature reaches 50°, increasing the admission of air with the increase of sun heat, and open the side lights. The ventilation should be reduced by closing the side lights in the first instance, and finally the top lights when the temperature declines to 50°. In summer the same conditions are to be observed, only the temperature should be kept at 60° to 65° through the day, observing the same rules as to commencing and closing the house. The temperature in winter should be 40° to 45° at night, and 45° to 50° in the daytime, by artificial means, which will be considerably advanced by sun heat, and in mild weather. Fire heat will only be necessary to maintain the temperature named, and to expel damp, when the fire should be lighted in the daytime and ventilation given.

Cinerarias Dying (*Anxious*).—Cinerarias "go off suddenly" from various causes—grubs or wireworms in the soil, too loose and rich soil inducing succulent growth in the early stages, allowing the plants to become much root-bound before repotting, permitting the sun to strike on the pots, thus scorching or withering the roots, an excess of stimulants, with faulty watering generally. Growers of Cinerarias for market do not lose one out of a thousand, and they pot much more firmly, using good "wearing" soil, than is customary in many private gardens, though in by no means all. The plants then grow steadily and sturdily, producing medium sized leaves of great substance that do not flag under a few gleams of sun, and it is rare for plants so grown to collapse in the manner indicated, always provided the soil is free from worms and other pests injurious to the plants. Cinerarias raised early in spring are more liable to "go off" than those raised later—in May or June.

Charred Garden Refuse (*O. C.*).—It is valuable for gardens, and may be prepared as described in our manual on manures, from which we cite the following:—"To char turfy soil the best method is to cut it into sods of about a spade's width and 2 or 3 inches thick when the soil is not over-saturated with moisture. Burning any kind of material, and allowing it to be consumed, producing nothing but smoke and ashes, is a real waste of valuable substance which could be turned to beneficial account for the culture of the soil. Commence by placing a small quantity of combustible material, such as dry weeds, hedge-trimmings, furze, heath, shavings, brushwood, or bushes, or any kind of dry vegetable refuse the place produces near at hand; then commence packing the sods, no matter how or what thickness, as any thickness may be charred by placing amongst them as the heap or kiln is proceeded with some one of the before-mentioned materials, or old tan or sawdust, just to keep the materials ignited. It is no matter how large or small the kiln may be formed, for this may be regulated by the convenience of the material at hand and the quantity of charred materials required; only, when the kiln is formed it should be slightly covered or cased with fine earth to prevent the fire from flaring and to maintain a steady, smouldering, charring or roasting. Much smoke will escape for a time, and when the smoke begins to subside it is a sign that the materials are charred enough. The fire should then be smothered by casing up the outside of the kiln quite close with earth. Although turf sods only are mentioned, the same process of charring may be carried out with weeds and other garden refuse if the outside of the heap is covered over closely with sods of earth, so as to exclude the air sufficiently to ensure the burning to be very slow and smouldering."

Fruit Preserving (*Inquirer*).—The information you require is probably contained in the following remarks by Mr. Beach at the recent Crystal Palace Conference of fruit growers. "On the Right Hon. Lord Sudeley's fruit farms the fruit is picked in the early hours of the morning by a number of women, who come from the neighbourhood of Staffordshire, who are glad to have the opportunity of obtaining labour in the open air. At eight o'clock A.M. a number of workpeople also arrive from the surrounding villages; these, with the other workpeople, number about 500 hands. The hands from Staffordshire are lodged on the plantation, as, of course, the distance from their homes is too great. The hour for the first delivery of fruit to arrive at the factory from the plantations is eight o'clock A.M. This may consist of Strawberries, Red and Black Currants, Raspberries, &c. These kinds are picked free from the stalks on the plantations, therefore the fruits are ready at once for the boiling pan, and thus retain their freshness and flavour. This goes on without intermission, with the exception of meals, about every two hours during the day, the average quantity of fruit gathered being about 15 to 20 tons daily. Should the fruit come into the factory in larger quantities than can conveniently be made at once into jam, it is put down in large stone bottles and casks, perfectly air-tight, for future use, this process being known as 'pulping,' the fruit turning out when required in months' time as fresh and bright as if recently gathered. This, of course, only applies when the fresh fruit is at once attended to, as every hour makes a difference to its appearance after being picked. The sugar used in the manufacture of these jams is known in the market as the 'White Duteh crushed,' and no other kind or any other substitute, such as glucose, &c, is allowed. There are sixteen steam pans in use, each capable of turning out 1 cwt. of jam every eight or ten minutes, or at the rate of about 40 tons daily. At the works a new venture is also being tried by drying the fruits in the same manner as the Americans. There are two No. 3 patented American evaporators, capable of drying about 40 bushels of Apples on fifty trays in each, the process taking about three hours. The greatest difficulty seems that the English Apples being smaller than the American ones, after paring and coreing, there is not sufficient to compare in size, when made into rings, with the Americans, but no doubt the flavour of the English would be superior. These machines can also be utilised for drying Plums, &c., when there is an abundant season; and, as one of the gentlemen yesterday remarked, there are quantities of Plums rotted upon the land some seasons for want of a market. There is also a large evaporating room erected similar to those on the Continent, for the purpose of drying prune Plums. This is capable of drying from one to two tons at one process."

Keeping Black Hamburgh Grapes (*R., Surrey*).—The Grapes that have been ripe now for six weeks will not keep so long as those that are ripened about this time, as the sun has much power in late August and early September, and acting on ripe thin-skinned Grapes, such as the Black Hamburgh, prejudicially affects them—not infrequently causing those that were jet black when first ripe to assume a reddish hue. When this takes place the Grapes are not only deteriorated in appearance, but the flavour is impaired and their keeping qualities considerably reduced. In order to insure Black Hamburgh and other thin-skinned Grapes keeping well they should be ripened beneath a good spread of foliage, yet not so crowded as to interfere with the free admission of light and air to the principal leaves. The Grapes not only colour quite as well, but the foliage prevents the sun from rendering them over-ripe, or at least prevents their losing colour—a sure indication of their days for keeping being numbered. As your Grapes have already begun to "mildew," which we apprehend is to decay and become mouldy, we think they will not under any circumstances keep long, probably not more than a few weeks. We presume you are fastidious in removing decayed berries as they appear, the bunches being examined frequently for the purpose, and every berry in the least decayed removed. This is absolutely necessary. Instead of firing at night, as a rule you should have fires in the daytime, and then ventilate freely, the heat being afforded early in the day and turned off so that the heating medium becomes nearly cold before nightfall. A little air may be given at the top of the house, which will prevent the deposition of moisture through the night; but when the weather is wet the house should be closed day and night, a gentle fire heat being employed to keep the air buoyant, and if moisture accumulates on the inside of the glass admit a little air by the top and bottom ventilators to dispel it. A moderately moist atmosphere is not injurious to Grapes keeping, provided it is not stagnant. The temperature by artificial means ought not to exceed 50° at night, and above this in the daytime air should, whenever the weather is favourable, be freely admitted. It will be advisable to cover the inside border with dry mats to prevent the evaporation of moisture from it, and the outside border should be covered with shutters to throw off the wet. The Grapes will keep better after the foliage begins to fall if they are cut with as much wood as can be spared, and the shoots inserted in bottles containing clear rain water with a few pieces of charcoal in each, the bottles being fixed in an inclined position so that the bunches will hang clear of the bottles. A dry and cool fruit-room is a suitable place, the Grapes, from the more equable temperature, keeping much better than the variable temperature and moister atmosphere of a vinery. We have cut excellent Black Hamburgh Grapes through December, and occasionally had very good bunches in January but they were not ripened until towards the end of September.

Mixing Soils (*J. Manton*).—Undoubtedly the practice is good when judiciously carried out, and upon the subject we have nothing to add to the following excellent remarks of Mr. Cuthbert Johnson:—I have witnessed, even in soils to all appearance similar in composition, some very extraordinary results from their mere mixture. Thus, in the gravelly soils of Spring Park, near Croydon, the ground is often excavated to a depth of many feet, through strata of barren gravel and red sand, for the purpose of obtaining the white or silver sand which exists beneath them. When this fine sand is removed, the gravel and red sand are thrown back into the pit, the ground merely levelled, and then either let to cottagers for gardens, or planted with forest trees. In either case the effect is remarkable, all kinds of either Fir or deciduous trees will now vegetate with increased luxuriance; and in the cottage gardens thus formed, several species of vegetables, such as Beans and Potatoes, will produce very excellent crops, in the very soils in which they would have perished previous to their mixture. The permanent advantage of mixing soils, too, is not confined to merely those entirely of an earthy composition. Earths which contain inert organic matter, such as peat or moss earth, are highly valuable additions to some soils. Thus, peat earth was successfully added to the sandy soils of Merionethshire by Sir Robert Vaughan. The Cheshire farmers add a mixture of

moss and calcareous earth to their tight-bound earths, the effect of which they describe as having "a loosening operation"—that is, it renders the soil of their strong clays less tenacious, and, consequently, promotes the ready access of the moisture and gases of the atmosphere to the roots. The cultivator sometimes deludes himself with the conclusion that applying sand, marl, or clay, to a poor soil, merely serves to freshen it for a time, and that the effects of such applications are apparent for only a limited period. Some comparative experiments, however, which were made sixteen years since, on some poor, hungry Heath land in Norfolk, have up to this time served to demonstrate the error of such a conclusion. In these experiments the ground was marled with 20 cubic yards only per acre, and the same compost, it was then planted with a proper mixture of forest trees, and by the side of it a portion of the Heath, in a state of nature, was also planted with the same mixture of deciduous and Fir trees. The growth of the trees has been there rapid and permanent, but on the adjoining soil the trees have been stunted in their growth, miserable in appearance, and profitless to their owner. Another, but the least commonly practised mode of improving the staple of a soil by earthy addition, is claying, a system of fertilising, the good effects of which are much less immediately apparent than chalking, and hence one of the chief causes of its disuse. It requires some little time to elapse, and some stirring of the soil, before the clay is so well mixed with a sandy soil as to produce that general increased attraction and retentive power for the atmospheric moisture which ever constitutes the chief good result of claying poor soils. Clay must be, moreover, applied in rather larger proportions to the soil than chalk, for not only is its application rarely required as a direct food for plants for the mere alumina which it contains, since this earth enters into the composition of plants in very small proportion, but there is also another reason for a more liberal addition of clay being required, which is the impure state in which the alumina exists in what are commonly called clay soils.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Novice*).—1, Belgian Purple ; 2, Bradshaw ; 3, Prince Engelbert ; 4, White Magnum Bonum ; 5, Hessle ; 6, Royale Hâtive. (*S., Birmingham*).—The Pears had no numbers attached, but the globular fruit is Ne Plus Ultra Mcuris, the other we do not recognise. (*H. M.*).—The Plum is Goliath. (*C. L.*).—The Plums should be accompanied by specimens of wood and foliage. A box of fruit has been received without any letter or indication where it is from. The Peaches are No. 1, Violette Hâtive ; 2, Teton de Venus ; 3, Barrington ; 4, Dr. Hogg. The Cherry is Belle Agathe, and the Apple is not known. (*S. S.*).—Red Autumn Calville. (*G. L. Court*).—Marechal de Cour. (*W. H.*)—1, Fondante d'Automne ; 2, Gansel's Bergamot ; 3, Souvenir du Congrès. 4, Nouveau Poiteau. 5, Comte de Lamy. (*Dr. Lowther*).—2, White Paradise ; 4, Yorkshire Greening ; 5, Chaumontel. The others we cannot identify. (*Ribstone*).—3, Minshall Crab ; 8, Court Pendu-plât ; 9, Dutch Codlin ; 11, Federal Pearmain.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes, Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W.*).—Spiræa callosa alba. (*J. R.*).—Euonymus japonicus argenteo-marginatus. (*J. C.*).—It is a Hæmanthus, but the flower was in a state of decay when it reached us. (*R. O. M.*).—1, Aster bessarabicus ; 2, Helianthus multiflorus ; 3, Papaver nudicaule.

COVENT GARDEN MARKET.—September 26th.

OUR market is now overstocked with Peaches, with difficulty clearing at low prices. Cobs down in price.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	2	6	to 4	6	
Cherries, ½ sieve	0	0		0	0
Cobs, 100 lbs.	50	0		60	0
Currants (Red). ½ sieve	0	0		0	0
,, (Black) ½ sieve	0	0		0	0
Grapes, per lb.	0	6		2	6
Lemons, case	10	0	to 15	0	
Oranges, per 100	4	0		9	0
Peaches, dozen	2	0		6	0
Pears, dozen	0	9		1	6
Plums, ½-sieve	2	0		4	0
St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	2	0	to 3	0	
Asparagus, bundle	0	0		0	0
Beans, Kidney, per lb.	0	2		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	0	0		0	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	0	0		0	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	3		0	4
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	2	to 1	3	
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
New Potatoes, per cwt.	8	0		14	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		8	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	3		0	7
Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to 3	0	
Arum Lilies, 12 blooms	3	0		6	0
Asters, dozen bunches	2	0		4	0
,, French, per bunch	1	0		1	6
Azalea, 12 sprays	1	6		2	0
Bouvardias, bunch	0	6		1	0
Calceolaria, 12 bunches	0	0		0	0
Camellias, 12 blooms	3	0		4	0
Carnations, 12 blooms	0	6		1	0
,, 12 bunches	4	0		6	0
Chrysanthemums, 12 bl.	1	0		4	0
,, 12 bchs.	2	0		6	0
Cornflower, 12 bunches	1	0		3	0
Dahlias, 12 bunches	2	0		4	0
Daisies, 12 bunches	2	0		4	0
Eucharis, dozen	2	0		4	0
Gardenias, 12 blooms	1	6		4	0
Lapageria, 12 blooms	1	0		2	6
Lavender, 12 bunches	3	0		4	0
Lilium longiflorum, 12 blooms	2	0		4	0
Margnerites, 12 bunches	2	0	to 6	0	
Mignonette, 12 bunches	1	0		3	0
Pansies, 12 bchs	1	0		3	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	3		0	6
Pyrethrum, doz. bunches	2	0		4	0
Roses, Red, 12 blooms	0	6		1	0
,, (outdoor), 12 bchs	2	0		6	0
,, (indoor), dozen	0	6		1	0
,, Tea, dozen	1	0		2	0
,, yellow	2	0		4	0
Stephanotis, 12 sprays	2	0		3	0
Stocks, 12 bunches	4	0		6	0
Sweet Peas, dozen	2	0		4	0
Sweet Sultan, 12 bunches	2	0		4	0
Tropæolum, 12 bunches	1	0		2	0
Tuberoses, 12 blooms	0	4		0	9
Gladiolus, 12 sprays	0	6		1	6
Violets, 12 bunches	1	0		1	6
,, Parme (French), per bunch	3	0		4	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to 12	0	
Arbor vitæ (goldon) dozen	12	0		24	0
Asters, 12 pots	3	0		6	0
Balsams, per dozen	2	0		4	0
Begonia, various, per doz.	4	0		9	0
Chrysanthemum, doz.	4	0		9	0
,, large, doz.	15	0		24	0
Coleus, dozen	2	0		4	0
Crassula, dozen	8	0		12	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0	to 10	0	
Fuchsia, dozen pots	3	0		6	0
Genista, per dozen	6	0		0	0
Heliotrope, dozen pots	3	0		6	0
Ivy Geranium	0	0		0	0
Hydrangea, dozen	6	0		12	0
Lilium, various, doz. pots	12	0		21	0
Marguerite Daisy, dozen	6	0		12	0
Mignonette, per dozen	4	0		6	0
Musk, dozen pots	0	0		0	0
Myrtles, dozen	6	0		12	0
Nasturtiums, per dozen	0	0		0	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		12	0
,, scarlet, doz.	3	0		6	



PROGRESS.

Sweet are the lessons of adversity when so applied as to ensure prosperity in the future, and there is ample evidence on all sides that the stern teaching of the agricultural depression has and is leading to a marked improvement in practical farming. The agricultural Press teems with instructive articles calculated to render farmers more hopeful, and if possible more energetic. A calm reasonable view of the situation has brought conviction to the minds of all sensible agriculturists that a prosperous future is possible. There are not wanting many who cry out about the risk of disaster from a wet summer, while others of a cynical disposition indulge in a sneer at landlords farming, and much grumbling at the condition of things in general.

Speculative farming as a remedy for hard times, such as the cultivation of Sugar Beet, Tobacco, Flax, fruit and vegetables has in most cases ended disastrously. Fruit and vegetables, if local conditions are favourable, undoubtedly answer well under skilful intelligent management, and it is precisely the absence of these qualifications which so often leads to failure. Take the examples of either fruit or vegetables to be seen in most provincial markets ; few, if any of them, are really good, and there can be no doubt that superior goods would command a ready market. In proof of this we may mention a case which came under our notice many years ago. The produce of a large private garden noted for its excellence was for certain reasons thrown suddenly upon the market of a large town where there was already an apparently superabundant supply, but the superiority of the goods from that garden ensured a brisk sale and higher price than ordinary market rates. The moral is plain enough ; if a farmer thinks of turning part of his farm into a market garden let him consider well whether he has sufficient skill and capital for the production of a really first-class article, and if the conclusion be at all doubtful let him confine his efforts to the cultivation of crops which he really understands. We once heard an excellent farmer of considerable local fame as a breeder of choice horses and bullocks declare that he had

also tried fruit farming, and failed to make it answer. When the worthy man went on to condemn fruit farming altogether with an air of conviction we felt a strong desire to test his knowledge of such work, as might easily have been done by a few leading questions.

Of Tobacco, the difficulty appears to lie in the manufacture rather than in the cultivation, and those gentlemen who have made the attempt to introduce its culture as a new farming industry into this country would have saved much time and money had they first of all become thoroughly acquainted with the process of its manufacture. Mr. H. T. Rathbone has recently written to the *Times* from Ireland to complain, that being an owner and occupier of land, and seeing the impossibility of competing with the foreign producer of corn, he had taken to Tobacco growing, but because he would not undertake to promise to pay a duty of 3s. 2d. per lb., the Excise had the plants destroyed. If the loss of his Tobacco only leads him to try and improve his corn growing, he will not have much reason for regret. In pleasing contrast to this letter was another, telling of a carefully planned and successful attempt at the selection and improvement of Kerry cattle ; of cows with an average of 504 gallons of milk yielding 12 per cent. of cream. The plan adopted for this herd was to purchase a considerable number of young beasts, to select the most promising as they came into profit, to discard all inferior animals, so as subsequently, by breeding and selection, to improve the breed up to a given standard.

In the general cultivation of farm land it is now fully established that success depends upon high culture, for which there must be sufficient capital, and then the matter is a certainty. But too often tenant farmers' capital falls far short of the proverbial £10 per acre, yet we know that even twice that amount may be invested to advantage upon corn farms. That very successful farmer, Mr. John Prout of Sawbridgeworth, has employed £20 per acre, and he has proved that yield and expenditure have more effect upon profit than the price of corn. Professor Elliot has recently, in the 'Land Agent's Record," given proof that high farming, by producing increased quantities, is able to compete with lower prices. He says distinctly that, "Since the repeal of the Corn Laws in 1846, the English land occupier has been compelled to compete with a large and constantly increasing import of corn, the effect of which has been to lower very considerably the value of English produce. In order to meet this the English farmer must increase the produce of his land ; this can only be acquired through the expenditure of extra capital in keeping the land clean and in a high state of cultivation." Fortunately for the farmer, increased quantity in produce has been proved to be equal, if not, in fact, to cover low prices.

WORK ON THE HOME FARM.

With fine settled weather the corn harvest is now going on with greatly improved prospects. Bright sunshine is eagerly welcomed and turned to account to render Peas especially ready for carting. Much Barley, too, among which there is a strong growth of Clover, has been turned as repeatedly as if it were being made into stover, which in point of fact the straw and Clover will be. If this weather continues after the corn is all mown second growths of Clover and Sainfoin will be mown also, the first for stover and the last either for stover or seed, according to its condition. Much corn has been threshed as it was carted from the fields during the last few days, and samples for sale have been plentiful at market. New Wheat has fallen to about 30s. per quarter, and very little Barley has reached a higher price. The regular Barley trade has hardly begun as yet. We have threshed none, and cannot offer an opinion as to quality other than that malting Barley must be decidedly inferior to that of last year.

We have had a little Wheat threshed of necessity, as we ran short of straw for thatching the corn stacks. The yield was so far satisfactory, being fully up to 40 bushels per acre. Light land farmers complain of a falling-off in weight in the Wheat of this season, but it by no means follows that this will be the case generally. We have seen it stated authoritatively that the Wheat grown this year is very inferior to that grown last year, and it will make at least 5 per cent. less flour and consequently 5 per cent. less bread. Present prices afford no real test of this, for it is the farmers' necessity which caused them to thresh and flood the market with samples. Full advantage is taken of this by the middlemen. If there be any truth in the premise that there will be an actual deficiency of 16,000,000 quarters of Wheat in the world's supply this year prices must rise eventually to a height unknown in recent years, and we shall certainly hold over the Wheat as long as possible. So we advise our readers to thresh only what is wanted for seed and wait.

IMPORTANT TO FARMERS AND OTHERS.—At the Spilsby petty sessions held recently, John Rowland Payn of Sibsey, farmer, was charged with supplying beer to labourers in his employ as part payment of wages. Mr. Gane appeared for the defendant. According to the evidence George Sands, John Bishop, and Edward Semper undertook to cut a piece of Oats for the defendant at 12s. per acre, after asking 14s. The point in dispute was, whether the beer supplied, half a gallon per man per day, was included in the bargain or whether it was the generosity of the defendant, who, it was stated, had said that if the work was done well he should not be particular to some beer. For the defence, the men affirmed that the beer was not mentioned until the bargain was concluded, and they were perfectly satisfied with the price agreed upon independently of it. The prosecution alleged that the beer was a consideration in the agreement, and with that view the Bench concurred, and fined the defendant 6d. and £1 7s. 6d. costs, as this was the first case under the new Act (the Truck Amendment Act, 1887) before them. It may be added that these Acts apply to all working-men called artificers, but not to domestic servants. A farmer, as employer, may pay his men partly in money and partly in food, cottage, or anything else they may agree upon, except intoxicating drinks, because the Act says he shall not contract to supply them with intoxicating liquors in addition to wages as a remuneration for services.

HAY-DRYING MACHINE.—Mr. W. Kruse writes : "In reply to the request on page 256 I may say that I do not know Mr. Gibbs' address, but it may help your correspondent if I mention that a notice of Mr. Gibbs' drying machine appears on pages 36 and 57 of the *Journal of Horticulture* for January, 1881.

OUR LETTER BOX.

Ensilage (*S. O.*).—The sample sent is an excellent one in all respects, and we shall be glad to learn your method of preparing it. The notes on Potatoes would be useful, and we are obliged to you for the offer.

Manure for Wheat (*A. J. C.*).—In autumn ½ cwt. nitrate of soda, ¼ cwt. steamed bone flour, ¼ cwt. superphosphate. In spring ½ cwt. muriate of potash, 1¼ cwt. nitrate of soda, 1¼ cwt. steamed bone flour, ½ cwt. superphosphate.

Land for Permanent Pasture (*A. D.*).—If you can get the land clean in time for Wheat sowing, give preference to that crop ; if not, sow the grass seed with Oats in spring. If when the Oats now being cut are carted the weather continues fine, plough at once, harrow next if the land is foul, and then cross plough. Or if you have a horse-hoe scarifier, ducks-foot harrow, or cultivator, the work may be best done with some such implement rather than by a second ploughing. If the land is hard and the clods contain the roots of perennial weeds, a heavy roller may be used with advantage. A spring surface dressing of artificial manure when the grass seed is sown will suffice.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. September.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 16	30.194	59.6	54.5	W.	57.0	63.7	55 3	102 7	51 9	—
Monday..... 17	30.267	57.0	54.7	N.	57.1	65 2	53.4	94.4	51.6	—
Tuesday 18	30 301	58.0	54 8	N.	57.2	62.6	52 0	9 .7	45.0	—
Wednesday.. 19	30.303	59.8	55 6	N.E.	57 0	69.2	53.9	112.6	49.1	—
Thursday.... 20	30.256	58 7	56.2	N.E.	56.9	68.2	49 4	105.6	41.8	—
Friday 21	30.237	58.1	55.3	N.E.	56 6	69.7	50 3	108 5	43.6	—
Saturday 22	30.247	56.7	55.6	N.E.	56 6	68 8	48.3	102.0	38 4	—
	30.253	58.0	55.0		56.9	66.8	51.8	102.5	45.9	—

REMARKS.

16th.—Generally overcast, but a little sun early and at midday.
17th.—Cloudy except for an hour at midday.
18th.—Bright in early morning, and cloudy during day.
19th.—Fine and bright all day, almost cloudless moonlight night.
20th.—Fine and bright throughout.
21st.—Overcast early, cloudy morning, bright afternoon and night.
22nd.—Fair morning fine bright day, and brilliant night.

Another fine week, less rain, and with temperature above the average.—G. J. SYMONS.

CLEAN CELERY.

IN numerous instances the rows of Celery are strong and well grown, only to be much damaged and disfigured by slugs. Where only just the heart is used it does not so much matter, but even these are sometimes reached by slugs, and none of us like to see much mutilated Celery lifted. If the whole or only a portion of the crop is marketed there is still greater necessity for protecting the outer stalks in some way, as all who buy Celery like to have plenty for their money, the value of each "stick" being decided according to the bulk of blanched outer stalks rather than the quality of the heart.

After trying various systems of growing Celery, more especially as regards the size of trenches and the number of rows that can be grown in each, I have long since arrived at the conclusion that single rows are the most profitable in the end, as it is possible to grow nearly as many plants in that way as can be done when double lines are placed in a single trench; not only can the finest Celery be grown in single rows, but these can also be more easily earthed up and better protected from slugs than can two or more rows in a trench. According to my experience heavy or moderately heavy lands can with very little trouble be made to produce Celery of the best quality, but unfortunately such soils are invariably the most infested with slugs. It is therefore in the process of earthing up that the greatest judgment must be exercised and the greatest pains taken, or what would have been very fine Celery will be completely marred quite early in the season.

In the first place it is a mistake to be in too great a hurry to complete the earthing, this giving the slugs good shelter and plenty of time to spoil the stalks. When the plants are well advanced and growing strongly, enough soil should be broken down and well worked round the plants, this acting as a mulch and also serving to prevent the outer leaves assuming a horizontal position. Two other earthings ought to be sufficient. If the second is given before the hearts are far advanced the mass of earth wedged against the stalks will effectually check their proper development. Better, therefore, to underdo rather than overdo it. The final earthing up must be done before severe frosts are anticipated, and only the very latest ought to be left till early in November. The ridges enclosing the Celery should be finished neatly, so as to throw off as much water as possible, and if only the best portion of the leaves is unburied a moderately severe frost will do but little harm.

Having briefly alluded to the manner of and time for earthing, it yet remains to be told how the Celery is to be kept clean, that is to say, but slightly disfigured by slugs. Where only a small number of plants are grown the simplest plan for preserving and effectually blanching the stalks of these is either to enclose each plant in a 5-inch drain pipe, or to wrap them round with two or more folds of strong brown paper. The former must be set over the plants fairly early, or when the leaves can be passed through without being damaged, but the brown paper may yet be used. At one time paper collars, invented by Mr. J. Simpson of Wortley Hall Gardens, could be purchased, and these answered very well, but would have been better if somewhat larger in size. These fastened with hooks and eyes, but the strips of brown paper used as good substitutes for the collars require to be fastened with strips of raffia. They must not be too tightly bound round the stalks, or the hearts will be unduly confined, and both paper or pipe-covered plants should be earthed up for the winter, the first soil being worked in early, and a final earthing given after the plants are fully grown. Few need to be told that Celery requires plenty of rich food and moisture at the roots, and deferring earthing up admits of liquid manure or water being applied quite late in the season. In very many instances the Celery is much too dry at the roots when the soil is placed round the stalks, and unless the autumn is exceptionally wet it is a long time before the rains benefit the crop. It is dryness at the roots that more often than not is the cause of premature bolting or running to seed, few being aware or taking the trouble to ascertain that the soil underneath could possibly be so dry with so much earth on the top of it. Even in such a wet season as that just passed through we found it necessary to give the rows of Celery a good soaking of water prior to commencing earthing up, and more had to be given at the second time. If this was necessary in our case it must have been most imperative where the subsoil is of a gravelly nature, ours being solid clay.

Those who devote much ground to Celery culture cannot afford to coddle it, and must perforce adopt some rough and ready methods of checking the slugs. In some instances a liberal application of soot, or soot and lime about the plants and among the soil, as it is worked round the Celery, helps to make the latter distasteful to the slugs and the quarters too hot for them. Soot especially is a good fertiliser, and though those who prepare the Celery for the table grumble at having it so black, it ought yet to be extensively used. On light soils a sprinkling of salt is also a preventive of slugs and acts as a fertiliser, but it must not come into contact with the leaves. The surest way of keeping Celery clean is to quite surround the stalks with fine burnt clayey soil or sifted ashes from coal fires. Both, in moderation, greatly improve heavy land, and the process of surrounding the Celery with them is not so tedious as might at first sight appear. It need not be used at the first earthing up, and enough may be worked in at the second time to quite answer the purpose for which it is added. The first proceeding should be to well gather the outer stalks together so as to effectually shut out any soil or rubbish from the hearts, the ties being made rather high up, or where they can be loosened again. A long board of any width may next be set on each side of and nearly close to the rows of Celery, and kept in position, if need be, with stakes fixed inside. Against the boards bank up the soil, and then fill in the space kept by the boards with either the burnt soil or ashes. The boards may then be drawn up, refixed, and a second layer of soil and other material added as before, or this may be delayed, if the Celery is backward, for another ten days. All may be finally banked over with soil. Thus treated, the Celery is less liable to decay during a cold wet winter, and invariably turns out clean and good.

I ought perhaps to add it is of the greatest importance that the heart be always well protected with the outer stalks while the process of moulding up is going on, and this can be done either by lightly tying them up with raffia or strips of matting, which must be taken off again, or one person may hold the stalks together while others are chopping down and working in the soil.—A VEGETABLE GROWER.

LIFTING AND REPLANTING OLD VINES.

I INCLINE to think the present is the best time of the whole year to carry out the above operation, as if lifted now it gives the Vines ample time to recover before shedding their leaves, and with careful management they may be made to produce a satisfactory crop of well coloured even bunches of Grapes the following year. I consider it a sheer waste of time heavily top-dressing yearly when once Vines show signs of distress and the shanking of the berries takes place. These annual top-dressings are undoubtedly highly beneficial to them when in a flourishing state, as it both

encourages plenty of healthy top roots and keeps them in good order for many years, but when this fails it is evident something more is needed to renew their vigour, and the only way is, in my opinion at all events, to dig them up and replant them in a fresh, sweet, suitable compost. In 1885 I lifted a house of Muscat Vines here, which for several years shanked badly, with the result that the following year I was rewarded with a good crop of medium bunches which finished well. The year I lifted them I was unable to cut a creditable bunch out of the whole house, and notwithstanding their old age they have wonderfully improved since the operation, and are now in a very satisfactory condition. I do not prefer the above plan to that of planting healthy young Vines, but it must be borne in mind there are some who do not care to have their old favourites destroyed, which have for many years yielded satisfactory crops of Grapes. Therefore it is to improve these I wish to recommend the lifting process.

The house of Vines referred to was dug up on the 1st and 2nd of October in the following manner. A trench was dug opposite the Vines, using for this purpose four-tined forks; all the soil was carefully removed, and every precaution was taken not to damage the roots more than possible. We found, however, very few of these for some time, but on approaching the stems of the Vines I was not in the least surprised at finding nearly all the principal roots had penetrated the drainage and reached the subsoil, which was undoubtedly the cause of the Grapes shanking, &c. These bare thongs we followed as far as we could, severed them, and tied them to the stems, damped them well, and covered them with wet mats. I need hardly say that while this was going on the Vines were very heavily shaded. I then had the drainage put right and the border refilled with a compost of moderately heavy loam, half-inch bones, and lime rubble, to within 8 inches of the top. I made a close inspection of the roots and cut off all that were damaged, some of which measure 3 feet or more in length, and as free of rootlets as a walking stick. On these I made incisions right and left at intervals of 6 to 10 inches, carefully relaid them and covered them with the new compost. It was somewhat doubtful whether or not the following season these Vines would prove a failure, especially considering the few roots we found attached to each Vine. As soon as the planting was finished the whole of the border received a thorough supply of tepid water. The house was kept close for several days, and the Vines syringed several times daily. They soon began to show signs of renewed vigour, and several of the young laterals which had been encouraged before lifting the roots quickly rambled over the trellis, and we then gradually admitted air and reduced the shading. I found on examining the border after the leaves had fallen from the Vines, which was about the usual time, that several young roots had already pushed into the fresh soil, some of which was almost as thick as quills. I allowed the following year each Vine to make a fresh rod to encourage a plentiful root action, and they were in no way hurried into growth, with the results previously stated.—H. Markham, *Mereworth Castle Gardens.*

THE SUMMER OF 1888 AND INSECT LIFE.

Whether the late Admiral Fitzroy was right in a prediction he is said to have made—viz., that 1888 would prove to be the last in a series of summers mostly unfavourable, can only be decided by time. This is certain, that if it be the last it was almost the worst of the bad seasons we have had for twenty years past, and there have been many. The rainfall was excessive, especially through July, as Mr. Symons has shown in his "Meteorological Magazine," though not unprecedented, but the low maximum temperatures have been very exceptional, and it is to the coldness even more than to the moisture that our loss and damage in field or garden is to be ascribed. The two, however, are closely connected, the cold being the direct consequence of the heavy rainfall, the reason of which is not apparent. This is to be considered, that in many places throughout Britain the spring was, on the whole, a dry one. We have not positive data as yet, but I am inclined to hope it will appear that the injury sustained will turn out to be less than some anticipated; and there are a number of localities, both coast and inland, where the reports as to the average weather of this summer contrast markedly with the general aspect, but the London district, be the reason what it may, is one that has had a bad time of it, hence the lugubrious tone of the leading journals.

The observation of gardeners throughout the country will bear me out in the statement that those insects which are commonly troublesome in the months of July, August, and September have been less abundant than usual in consequence of the frequent rains and the lack of warmth. It may be accepted as a fact that ungenial summers like that we have just endured do tend to reduce our insect enemies; but we must, I think, at once discredit a still prevalent notion amongst country folks that thunderstorms destroy a good many insects, for 1888 has been a year of thunderstorms and thunder showers; still, I cannot trace a diminution of insects to any electrical disturbances this year any more than in former years. If insects are killed in storms it is not by the lightning, but by the frequently heavy rain accompanying. What, then, occasions the death of insects or the suppression of broods which might have hatched out in such seasons as 1888? There is a double influence, upon the food of insects and upon the insects themselves, and we may take just two instances of the former as an illustration. Some insects in their larval stage feed upon the flowers of wild or cultivated plants. One peculiarity of this season has been that with many species the weather tended to encourage a profuse growth of leaves, but checked the development of blossoms, thus subjecting the flower-eaters to short commons, possibly even to starvation, where the envelopes have been washed off by rains. Then, again, with certain root-feeders; some roots have this year in consequence of the moisture been so decomposed that other species have come into rivalry, and the caterpillars or grubs which subsist upon healthy roots have been ousted by others which live upon them when decaying.

But it is rather upon the insects themselves that the influence of a wet and cold season are perceptible. In the egg state they sustain no injury, yet it may happen that the emergence of the young larvæ is so far delayed as to render it less easy for them in hatching to obtain their appropriate food. Thus I have noticed a Lilac-eating caterpillar of the Tortrix family come out late some seasons, and in consequence many were starved from the shrub losing its leaves suddenly and rapidly. Still, to a great extent plants and insects keep pace together, a check to one proving also a check to the other. It is in the larval or second stage of life that the effects of an ungenial summer tell chiefly on insects. Beetle grubs suffer little; those of butterflies and moths are very susceptible, dying off from diarrhœa or a fungoid disease; also in the order to which the plantlice and scale insects belong, it is noticeable that nearly all the species thrive best during warm and dry, but not excessively dry, weather. The pseudo-caterpillars of the saw-fly group, however, seem to flourish in showery weather. Insects of all orders while in the pupa or quiescent state, should they be in the earth, are likely to be killed when the soil is super-saturated with moisture and they are more exposed to the attacks of bird or molluscous foes. Cocoons of insects fastened to twigs or walls are frequently damaged by the high winds of summer, and the contents fall out to be eaten by other creatures. Lastly, in their final stage of life, during wet summers, multitudes of insects with tender wings and bodies are, even if they survive for a while, unable to accomplish the work of depositing eggs to produce a future brood. I venture to think we may not be much troubled with insects next year.—Entomologist.

POTATOES.

The present is a busy time with farmers and gardeners in lifting and storing Potatoes, and a few notes may not be out of place. In a season like the present great care should be exercised in lifting and storing the tubers so as to preserve them in the best condition until they are wanted for use. I remember when I was a lad my father used to grow some excellent crops of Potatoes, and his plan was always to get them up as soon as ripe, and in as dry a state as possible, and then store them in pits on the ground, covering them with thin turves or straw, and about a foot in depth of earth, making the pit smooth and even with the back of the spade to throw the rain off.

Since those days I have helped to lift and store Potatoes in different parts of the country, and have seen it done in various ways, but still I think where several tons of Potatoes have to be stored away for use through winter and spring no plan with which I am acquainted is better than the one I have just mentioned. Where good cool sheds exist and plenty of room, and where the frosts can be kept out, then I should by all means use them, taking care to have the tubers always well covered up in frosty weather.

Where they are stored in pits out of doors, and when wanted for use the pit should be opened on a fine day, and enough taken into a shed or some handy place to last a fortnight or longer. Sometimes in a long spell of frosty weather it will necessitate breaking into the pit to obtain Potatoes for present use. In this case I would open it in the middle of the day, have the tubers taken in as quickly as possible, and the pit closed again without delay. I have seen this done in very severe weather with no bad effects resulting.

In cases where the tubers are affected with disease they should be well sorted, and no tubers that are in the least diseased should

be placed with the sound ones, but should be stored by themselves for immediate use. If stored with the others they will soon do much damage, and the whole may become diseased.

All Potatoes should now be lifted without delay when the ground is in good order and the tubers come out clean, which enables it to be seen which are diseased and which are not. Out of seven early and second early sorts grown here Myatt's Ashleaf and Veitch's Improved Ashleaf have been the worst diseased. Beauty of Hebron showed signs of the malady first, but the haulms were at once pulled up, and when lifted about three weeks after scarcely a diseased tuber was to be seen. Main Crop Kidney has turned out well with us ; only two or three diseased Potatoes could be found. The tubers are of even size, and when cooked are very good. Sutton's Abundance and Adirondack are two first-class main crop Potatoes that I can strongly recommend. They are heavy croppers and are not much affected with disease, are of excellent flavour when cooked, and keep well to May and June —G. Hilton.

GROS MAROC AND COOPER'S LATE GRAPES.

More than once the distinctness of the above varieties has been questioned in this Journal, and having two canes of each variety planted side by side about two years ago they were fruited this year for the first time, and I have paid them particular attention from the time that the Vines started growing until now, when the crop is ripe, and I consider them quite distinct varieties. Their growth and foliage are alike, except that Gros Maroc is a little darker in the foliage before coming into flower, but in this early stage of growth the most marked difference is at the thinning stage. The bunches of Cooper's Late when ready to thin is very like a Black Hamburgh, the berries all drooping down with long footstalks, whereas the bunches of Gros Maroc are more like Gros Colman, with berries quite stiff and horizontal. Passing to their present stage we have the two varieties ripe covered with a fine bloom, but if anything Gros Maroc is the better in this respect, but in shape of bunch and size of berry they show quite a distinct character. The bunches of Cooper's Late are longer and more tapering than Gros Maroc, with smaller and rounder berries. The following will clearly explain. All the bunches of the two varieties were thinned alike, and I now find that Gros Maroc was left too thick, as some of the berries are quite jammed, while the bunches of Cooper's Late are rather loose, and a few more berries left at thinning would be an improvement. I may say that I secured the eyes of Cooper's Late from Mr. Lees when gardener at Hillsborough Castle, and who used to show it so well at the Edinburgh autumn shows.—David Murray, *Culzean Castle, Maybole.*

BERKELEY CASTLE.

There are few of the "historic homes of England" to which a deeper interest, and none to which a more tragic one attaches itself, than that which surrounds the ancient homes of the Fitzhardinges, for it was here that the weak and unhappy King Edward II. was "done to death," after suffering a series of prolonged humiliations and miseries, which covered his enemies with shame, and has left their name to be abhorred by all succeeding generations of Englishmen. It had long been my desire to visit this fine old baronial castle, and an opportunity having presented itself during a late visit to Gloucestershire, I gladly availed myself of it. To visit a place is one thing, but to visit it in pleasant company is another, and as a curious incident in one's life, I may be pardoned if I allude to it. Forty-nine years ago a very merry party went over in a yacht to see that magnificent pageant the Eglinton Tournament. We were thirteen in number, most of us young. Of all the number all had passed away except two, and those two had never met since then until the Gloucester Rose Show, when a lady found me out there and made herself known to me. At first I failed to remember, but when she mentioned the Eglinton Tournament all came back fresh to my memory. At her request I visited her at her husband's pleasant vicarage near Gloucester, and he very kindly arranged the party which on a bright and pleasant day—of which we have had so few this year—we made to Berkeley Castle. How much changed from those early days all was! and yet I am thankful to say we did most heartily enjoy ourselves, and were able to be thankful that after so many many years we were permitted to meet again.

I have said that much mournful interest attaches to Berkeley Castle, and, like most of our ancient castles, it has a long and interesting history ; and, as is so often the case, totally different families, but assuming the same name, were successively owners of the estate. The De Berkeleys who originally held it were of an old Saxon family, who took their name from the manor of which they became possessed, and lived there until the male line became extinct in the reign of Stephen in 1382. In the wars of Stephen's reign the Empress Matilda received money and assistance from the Bristol merchants, amongst whom was a Robert Harding or Fitz Harding ; for this assistance he was rewarded by the gift from Prince Henry of the Manor of Berkeley, expelling therefrom Roger de Berkeley. However matters were smoothed over by what was often an expedient in those days—a marriage—and thus Robert Fitzhardinge obtained quiet possession of the Royal manor of Berkeley, and in his family it has remained with one short exception up to the present time. The lords of Berkeley have played no unimportant part in English history. One of them was amongst the Barons who won Magna Charta from King John, and the Castle was one of their meeting places. They were engaged in the war which reduced Wales, and also in the Scotch wars against Wallace and Bruce. They crossed the sea and fought at Crecy, Poitiers, and Agincourt. The meeting between Henry of Lancaster and the Duke of York, which led to the downfall of Richard II., was held at the Castle. They took no active part in the wars of the Roses, having a nice little quarrel of their own to settle, during which the Castle was taken and retaken several times. Berkeley suffered during the Parliamentarian wars, but less so than many places ; while in recent years the lords of Berkeley have been remarkable for their love of sport, and a fine pack of hounds testifies to the present earl's love and encouragement of sport.

The garden at Berkeley Castle is not what is called a show garden. You see no such stately houses as at Chatsworth, nor the long range of structures as at Drumlanrig, nor the grand gardens of Trentham. In these and other places the individual taste of the owner favours the operations of the gardener. But Lord Fitzhardinge has no love for flowers. If he walks through the gardens he takes but little interest in them, and hence they are more utilitarian than ornamental. Plants are grown in them, and grown well, by Mr. Shore, who unfortunately was absent at the time of my visit ; but they were plants mostly used for the ornamentation of the house, whether as plants or cut flowers. Nowhere have I seen better plants of Eucharis grandiflora all in good and healthy condition. Here, too, one found well-grown examples of a fine stove plant, too often neglected, but wherever grown always welcomed, Strelitzia reginæ, while the small conservatory was gay with Begonias, Pelargoniums, and well-managed plants of Campanula pyramidalis, which is exceedingly effective when well done at this time of the year. Then the houses devoted to fruit were in excellent order ; a fine crop of Peaches and Grapes had been gathered, and others were in course of coming on, and so all through everything was well done.

But I think the chief feature at Berkeley is the terrace garden. This is situated at the south side of the Castle and against its walls. It is thus in a sunny and favourable aspect for growing many things, especially in the sheltered position that Berkeley occupies. Against the walls Magnolias, Roses, Ceanothus, Myrtles, and other flowering shrubs occupy places which were doubtless in former times filled with various means of defence, which it became needful to use, exposed as it was to the incursions of the Welsh. On the terrace itself are beds of various flowers, such as Salpiglossis, Carnations, and other old-fashioned flowers, the sunny aspect of the terrace being peculiarly adapted for their early development. Then in another part is the neatly kept bowling green, surrounded by shrubs of various kinds, and then what grand trees and what abundant foliage there is about the place ! how splendid are the Elms, which rejoice in their rich deep soil ! and what a grand view is obtained from these terraces, or better still from the tower called Thorpes Tower ! Here the eye may roam over a view unsurpassed in its way for loveliness and beauty. North and south runs the rich vale of Berkeley, with its verdant pasture and splendid foliage. Turning to the east and south-east the Cotswolds are seen rising up here and there through the dense mass of Beech groves which clothe their sides into the bare chalky downs in which their summits end, and then you see deeply wooded valleys running into them, where doubtless many a scene of beauty can be enjoyed. On the west side the Severn flows, while beyond it are the woods of the Forest of Dean, suggestive of much coal and iron, of collieries and smelting works, while close at hand the town lies, as in so many cases of these old castles, nestling for shelter, and as in Arundel, Alnwick, and other places, and, indeed, as it was needful, for as the inhabitants were all in some way connected with the Castle, they needed to be protected when the lords of Berkeley had to defend themselves.

Before concluding this brief notice of Berkeley Castle, let me say that although the gardening presents no grand features it does present that which is often wanting in more pretentious places, extreme neatness and tidiness. Nowhere inside the houses or out of doors were there the slightest marks of slovenliness. I have been to places from whence the most magnificent plants were sent to the chief shows in the kingdom, and one had to go through a series of dung heaps to see them, and except in the houses themselves dirt and confusion ruled supreme. Here both garden and pleasure ground were pleasant to see, and did much credit to Mr. Shore, under whose management they have been for some years. —D., *Deal.*

A USEFUL PEACH CASE.

Peach-growing, as most gardeners know, is very uncertain out on the open walls, and the genial rector of Welbourn, the Rev. F. Leslie Melville, and his family, who are fond of good Peaches, found trusting to trees on a south wall was very disappointing. An elaborate Peach house heated with hot water was not wanted, but sufficient shelter to protect the trees when in bloom ; also something that would help to ripen the fruit and wood for the following year. That this has been accomplished may be judged from the fact that trees are loaded with fruits. I counted seventy-eight beautiful fruit on one tree of Grosse Mignonne Peach, 9 feet 6 inches by 7 feet, and several others were cropped in the same way. The trees are well supplied with liquid

manure, but I do not think they can carry crops like they have this season many years without a breakdown. Noblesse and Royal George were well cropped, also Princess of Wales, but was not thought highly of, it had no colour scarcely. Nectarines were as heavily cropped as the Peaches. Strange to say there was a large Green Gage Plum on the wall about the middle of the case. Not one fruit had there been on it this year. I was told there was a good crop last year; the tree promises well for 1889. I may say that the Rev. F. Leslie Melville will be pleased to show his Peach case to anyone interested in Peach-growing without fire heat. Welbourn is about halfway between Grantham and Lincoln, by the side of the Great Northern Railway. Leadenham is the station for Welbourn.

I will give the size of the Peach case as nearly as possible: Length, 98 feet; height of back wall, 8 feet; width at ground line, 7 feet. Two 11-inch boards form the front or perpendicular, one board is hinged and forms the front ventilator. The top glass just slopes enough to allow the water to run off. The top is 3 feet 6 inches wide; the front glass is 6 feet from the angle at roof to front boards, and slopes into the place 3 feet. There is a 6 or 7-inch board hinged and worked with iron rods for top ventilation. The glass is 21 ounce, 20 by 15 inches, the bars for glazing are T irons 15 inches apart. A board 11 inches wide and 1 inch thick is placed flat side to the wall at the top. Just under the eave bolts go through the board and wall and screw up tight. The T irons are screwed to the top side of the board. There are about 7 inches of glass left out of the T irons; the 7-inch board is hinged to the same board, I believe for ventilation. To strengthen the front there is ¾-inch iron rod let into a stone in the ground every 4 feet. There is a T iron runs along the bottom of the others; they are rivetted to the one horizontal, and the bolts or rods through it also, and all rivetted together. I was told the whole of the 98 feet run, and 8 feet high and 7 feet wide at the base, cost about £20.—GEO. PICKER.

THE PROGRESS OF BOTANY.

(*Continued from page 297*).

GEOGRAPHICAL BOTANY.

A GOOD deal, however, has been done. We owe to the indomitable industry of Mr. Bentham and of Sir Ferdinand Mueller a comprehensive flora of Australia, the first large area of the earth's surface of which the vegetation has been completely worked out. Sir Joseph Hooker, in his retirement, has pushed on within sight of completion the enormous work of describing so much of the vast Indo-Malayan flora as is comprised within the British possessions. To the Dutch botanists we owe a tolerably complete account of the Malayan flora proper. But New Guinea still remains botanically a *terra incognita*, and till within the last year or two the flora of China has been an absolute blank to us. A Committee of the British Association (whose report will be presented to you) has, with the aid of a small grant of money, taken in hand the task of gathering up the scanty data which are available in herbaria and elsewhere. This has stimulated European residents in China to collect more material, and the fine collections which are now being rapidly poured in upon us will, if they do not overwhelm us by their very magnitude, go a long way in supplying data for a tentative discussion of the relations of the Chinese flora to that of the rest of Asia. I do not doubt that this will in turn explain a good deal that is anomalous in the distribution of plants in India. The work of the Committee has been practically limited to Central and Eastern China. From the west, in Yunnan, the French botanists have received even more surprising collections, and these supplement our own work in the most fortunate manner. I have only to add, for Asia, Boissier's "Flora Orientalis," which practically includes the Mediterranean basin. But I must not omit the invaluable report of Brigade-Surgeon Aitchison on the collections made by him during the Afghan Delimitation Expedition. This has given an important insight into the vegetation of a region which has never previously been adequately examined. Nor must I forget the recent publication of the masterly report by Prof. Bayley Balfour on the plants collected by himself and Schweinfurth in Socotra, an island with which the ancient Egyptians traded, but the singularly anomalous flora of which was almost wholly unknown up to our time.

The flora of Africa has been at present but imperfectly worked up, but the materials have been so far discussed as to afford a tolerably correct theory of its relations. The harvest from Mr. Johnston's expedition to Kilimanjaro was not so rich as might have been hoped. Still, it was sufficient to confirm the conclusions at which Sir Joseph Hooker had arrived, on very slender data, as to the relations of the high-level vegetation of Africa generally. The flora of Madagascar is perhaps, at the moment, the most interesting problem which Africa presents to the botanist. As the rich collections, for which we are indebted to Mr. Baron and others, are gradually worked out, it can hardly be doubted that it will be necessary to modify in some respects the views which are generally received as to the relation of the island to the African continent. My colleague, Mr. Baker, communicated to the York meeting of the Association the results which, up to that time, he had arrived at, and these subsequent material has not led him to modify. The flora as a whole presents a large proportion of endemic genera and species, pointing to isolation from a very ancient date. The tropical element is, however, closely allied to that of Tropical Africa and of the Mascarene Islands, and there is a small infusion of Asiatic types which do not extend to Africa. The high-level flora, on the other hand, exhibits an even closer affinity with that temperate flora, the ruins of which are scattered over the mountainous regions of Central Africa, and which survives in its greatest concentration at the Cape.

The American botanists at Harvard are still systematically carrying on the work of Torrey and Gray in the elaboration of the flora of Northern America. The Russians are, on their part, continually adding to our knowledge of the flora of Northern and Central Asia. The whole flora of the North Temperate Zone can only be regarded substantially as one. The identity diminishes southwards and increases in the case of the Arctic and Alpine regions. A collection of plants brought us from high-levels in Corea by Mr. James might, as regards a large proportion of the species, have been gathered on one of our own Scotch hills.

We owe to the munificence of two English men of science the organisation of an extensive examination of the flora and fauna of Central America and the publication of the results. The work, when completed, can hardly be less expensive that of the results of the *Challenger* voyage, which has severely taxed the liberality of the English Government. The problems which geographical distribution in this region presents will doubtless be found to be of a singularly complicated nature, and it is impossible to over-estimate the debt of gratitude which biologists of all countries must owe to Messrs. Godman and Salvin when their arduous undertaking is completed. I am happy to say that the botanical portion, which has been elaborated at Kew, is all but finished

In South America, I must content myself with referring to the great "Flora Brasiliensis," commenced by Martius half a century ago, and still slowly progressing under the editorship of Prof. Urban, at Berlin. Little discussion has yet been attempted of the mass of material which is enshrined in the mighty array of volumes already published. But the travels of Mr. Ball in South America have led him to the detection of some very interesting problems. The enormous pluvial denudation of the ancient portions of the continent has led to the gradual blending of the flora of different levels with sufficient slowness to permit of adaptive changes in the process. The tropical flora of Brazil, therefore, presents an admixture of modified temperate types which gives to the whole a peculiar character not met with to the same degree in the tropics of the Old World. On the other hand, the comparatively recent elevation of the southern portion of the continent accounts, in Mr Ball's eyes, for the singular poverty of its flora, which we may regard indeed as still in progress of development.

The botany of the *Challenger* Expedition, which was also elaborated at Kew, brought for the first time into one view all the available facts as to the floras of the older oceanic islands. To this was added a discussion of the origin of the more recent floras of the islands of the Western Pacific, based upon material carefully collected by Prof. Moseley, and supplemented by the notes and specimens accumulated with much judgment by Dr. Guppy. For the first time we were enabled to get some idea how a tropical island was furnished with plants and to discriminate the littoral element due to the action of oceanic currents from the interior forest almost wholly due to frugivorous birds. The recent examination of Christmas Island by the English Admiralty has shown the process of island flora-making in another stage. The plants collected by Mr. Lister prove, as might be expected, to be closely allied to those of Java. But the effect of isolation has begun to tell; and I learn from my colleague, Prof. Oliver, that the plants from Christmas Island cannot be for the most part exactly matched with their congeners from Java but yet do not differ sufficiently to be specifically distinguished. We have here, therefore, it appears to me, a manifest case of nascent species.

CLASSIFICATION.

The central problem of systematic botany I have not as yet touched upon: this is to perfect a natural classification. Such a classification, to be perfect, must be the ultimate generalisation of every scrap of knowledge which we can bring to bear upon the study of plant affinity. In the higher plants experience has shown that we can obtain results which are sufficiently accurate for the present without carrying our structural analysis very far. Yet even here, the correct relations of the Gymnosperms would never have been ascertained without patient and minute microscopic study of the reproductive processes. Upon these, indeed, the correct classification of the Vascular Cryptogams wholly depends, and generally, as we descend in the scale, external morphology

becomes more and more insecure as a guide, and a thorough knowledge of the minute structure and life-history of each organism becomes indispensable to anything like a correct determination of its taxonomic position. The marvellous theory of the true nature of Lichens would never have been ascertained by the ordinary methods of examination which were held to be sufficient by lichenologists.

The final form of every natural classification—for I have no doubt that the general principles I have laid down are equally true in the field of zoology—must be to approximate to the order of descent. For the theory of descent became an irresistible induction as soon as the idea of a natural classification had been firmly grasped.

In regard to flowering plants we owe, as I have said, the first step in a natural classification to our own great naturalist, John Ray, who divided them into Monocotyledons and Dicotyledons. The celebrated classification of Linnæus was avowedly purely artificial. It was a temporary expedient, the provisional character of which no one realised more thoroughly than himself. He, in fact, himself gave us one of the earliest outlines of a truly natural system. Such a system is based on affinity, and we know of no other explanation of affinity than that which is implied in the word—namely, common parentage. No one finds any difficulty in admitting that, where a number of individual organisms closely resemble one another, they must have been derived from the same stock. I allow that, in cases where external form is widely different, the conclusion to one who is not a naturalist is by no means so obvious. But in such cases it rests on the profound and constant resemblance of internal points of structure. Anyone who studies the matter with a perfectly open mind finds it impossible to draw a line. If genetic relationship or heredity is admitted to be the explanation of affinity in the most obvious case, the stages are imperceptible by which the same conclusion is seen to be inevitable when the evidence is fairly examined, even in cases where at the first glance it seems least likely.

(To be continued.)

ORCHIDS

ONCIDIUM ORNITHORHYNCHUM.

The above is a most useful species, blooming at a season when Orchid flowers are scarce. It is remarkably well grown by Mr. T. A. Glover, gardener to E. Ellis, Esq., Manor House, Wallington. One plant I noticed suspended in the conservatory, where it has been for several weeks, was in a 5-inch pot, carrying fifteen graceful drooping spikes, with a total of 650 beautifully scented and delicate rose-coloured flowers. It is grown in the Cattleya house near the glass. The pretty little O. cheirophorum under the same treatment is at the present time well furnished with branching spikes, and there will soon be a display of O. varicosum and O. Rogersi to succeed the O. tigrinum, O. cucullatum, which are now in flower. Saccolabium guttatum is here represented by a good form bearing a spike 18 inches long, densely clothed with white and purple blooms. Cattleya velutina and various Cypripediums are also flowering well.

Mr. Glover has succeeded in establishing a fine piece of the new Cœlogyne Sanderiana, the fresh growths being nearly equal to the imported ones. It is grown on a shelf in a warm and moist house where Phalænopsis used to do so well, in company with some fine Calanthes.—G. W. C.

ONCIDIUM JONESIANUM.

What a very free-flowering Orchid this is! We have several plants now flowering beautifully, and they are most valuable for cutting from, as the spikes have a very elegant appearance. It succeeds in the Cattleya house in a basket with crocks, no peat or sphagnum being necessary. It needs a plentiful supply of water. The foliage is also very distinct from other Oncidiums.—A. Y.

COMPARETTIAS.

There are now numbers of beautiful winter-flowering Orchids in cultivation, and with a moderately extensive collection little difficulty is experienced in maintaining a bright and satisfactory display in the structures devoted to such plants. The small genus now under notice is well known to many Orchid growers; and though the few species it includes are not entitled to rank among the most showy of their order, they possess several recommendations. The racemes are elegant, generally drooping, and bearing small but brightly coloured flowers that are produced in the latter months of the year, or from January to March. The plants are all epiphytal in habit, succeeding well on small blocks of wood suspended from the roof of a moderately warm house, but not where they are too fully exposed to the sun. In other respects the treatment they require is similar to that of most tropical epiphytal Orchids.

Comparettia falcata, the species represented in fig. 34, is one of the best known, and is seen in most metropolitan nurseries and in the chief collections of Orchids in the country. It produces a rather loose raceme of deep rose or crimson-coloured flowers from the base of the pseudo-bulbs, the scape usually being much longer than is shown in the cut, the flowers being borne near the extremity. The labellum is the chief distinctive feature of the flower, it being strangely restricted in the middle. C. rosea is another pretty species with with shorter and more compact racemes



Fig. 34.—Comparettia falcata.

than that mentioned above, but it is much more rarely seen. C. coccinea, which has pale scarlet tinted flowers, is very attractive and free in flowering, particularly handsome specimens being occasionally met with.—R. L.

MILTONIA CUNEATA.

The Miltonias constitute a genus of handsome Orchids. The name was given in honour of Earl Fitzwilliam, who was an ardent admirer of plants of this nature. They are mostly natives of Brazil, and consequently require a warm stove temperature, especially during the season of growth. If given heat and a moist atmosphere few Orchids grow more freely or flower more profusely, and their richly coloured flowers are admirable for cutting and the furnishing of vases, &c. The plants will grow either in baskets or in pots; if in the latter it is necessary that they be potted very high—that is, the pots should be nearly filled with crocks; and the material, very fibrous peat, sphagnum, and charcoal, should be made to form a cone above the rim of the pot. The creeping stems from which the pseudo-bulbs grow should be pegged to the surface of the compost with small hooked pegs, and with good cultivation the plants will increase in size rapidly. If grown in baskets the plants re-

quire much the same treatment as Stanhopeas as to heat, moisture, and rest. The species vary considerably in size and colour of their flowers, but all are attractive and worthy of culture. M. spectabilis is white and violet, and is, as its name implies, very showy, as also are its darker varieties autropurpurea and colorata. M. candida has a white lip and yellow and brown sepals, while M. cuneata, the wedge-lipped Miltonia, is yellow and purple. The plants being epiphytal grow perhaps best in baskets, and will flourish in any plant stove where the summer temperature ranges from 60° to 90°, and the winter temperature from 55° to 60°.—B.

THE CULTURE OF PHAIUS.

This fine genus of Orchids are all terrestrial—that is, they are found in their native habitats growing on the ground. It follows that a plant found growing on the ground requires, in artificial culture, a soil approximating to that from which it has been brought. The soil in woody dells in the Mauritius, China, Nepaul, and other places where they are found is generally of a loamy texture, but the surface is composed of the *débris* of the trees of the forest for generations, consisting chiefly of leaves, twigs, and branches in a decaying state. In order to imitate such a soil we have used always for these plants a compost of loam and leaf mould, not too much decayed, and sand sufficient to keep it open, with perfect success.

Drainage is a point of considerable importance in their culture, as on account of their rapid large growth they require generally large pots ; the drainage should be in proportion. Cover the hole or holes at the bottom of each pot with one large piece of broken potsherd or an oyster shell ; prop this up with a small piece of pot thick enough to allow a free passage for the superfluous water ; then place over them a layer 1 inch thick of smaller broken potsherds, and over them a layer half an inch thick of the smallest size without any dust amongst them (this should be sifted out with a very fine-meshed sieve, and will be useful to mix with the compost for dry stove or succulent plants). Cover these finally with some bog moss not too thick, and then the drainage will be perfect.

Potting.—The season for this operation depends upon the state of the plants. If properly managed with regard to the season of rest they should begin to grow about the middle of February, and then is the time to set about potting. Take the plant or plants to the potting bench, turn the pot upside down, catch the ball with one hand, and remove the pot with the other. Give the ball a gentle tap on the edge of the bench to loosen the soil from amongst the roots, and then dress the plant all over ; trim off all dead or decaying roots, cleanse the pseudo-bulbs from old sheaths, insects, &c. ; dead or decaying leaves cut off at once, and sponge the fresh living ones with tepid water, cleaning off and destroying scale, bug, or any other vermin infesting them. If it is desired that is the time to divide the plants for increase. One or more of the back or oldest pseudo-bulbs may be cut off just at the connecting joint ; these should be potted into small pots, and have no water till fresh shoots are made. Should very large specimens be desired these divisions may all be put in the same pot together and allowed to grow together till they flower, and thus form one large fine specimen. To return to potting. After the plant is well cleansed and divested of all dead and decaying matters proceed to pot it. First put in the new pot a slight layer of earth upon the drainage, then work in the long wiry roots equally all round and in the pot, then hold the plant in the centre of one pot with one hand and gradually mix the earth amongst the roots with the other. This will take a little time and care to do it well without injuring the roots or thrusting them together in bundles—the endeavour and aim should be to leave the roots equally spread out amongst the new soil. Finish by leaving the plants level with the rim of the pot, press down the soil at the sides next the rim to hold a fair supply of water, and the operation is finished.

The best position is a mildly heated bed of tanner's bark, either in a pit or in a common Pine stove. The nearer they are to the glass, so as not actually to touch it, the better. They should be well shaded with a canvas shade that will shelter them from the rays of the sun in summer, but remove it in winter ; the leaves are thin and are easily disfigured if exposed during summer to its rays. Give air moderately on all fine days, but not too much at once.

Excepting Phaius grandifolius they all require a high temperature when growing, 75° to 85° by day and 65° to 70° by night. In winter the heat should be very moderate, because then the plants are at rest.

Water.—If the plants are plunged in a bark bed, they will not require so much water as they would if grown on a platform over the pipes or on a stage in the centre of the house. Water, then, according to the position the plants occupy, only take notice that too much water at any time is highly injurious, and will cause the roots to perish very suddenly. In the resting season scarcely any water will be required, only enough to keep the leaves from flagging too much. Some lose their leaves entirely once a year ; such will bear scarcely any water when at rest. The syringe may be used freely when the plants are growing. Allow the water to fall upon the leaves like a gentle Scotch mist or drizzling rain ; but when using it to the under side of the leaves give a little more force to wash off the red spider, should he have founded a colony there.

As the flowers of the greater part of the genus appear at the same time as the new growths it follows that they will flower in the early part of the year, generally about the end of April to the beginning of June. Phaius grandifolius may be so managed by starting it into growth at various periods as to greatly prolong the season of its blooming. We have had it in flower from January to June by starting a plant or two at a time at intervals of a month between each period.

Like their epiphytal compeers the terrestrial Orchid must have a season of rest ; and as light is necessary to grow and mature the growth, it follows that the best season for repose is when there is the least amount of light in our climate ; therefore, the winter months are the best for placing these plants to rest.—Orchid Grower.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

On September 8th last at the conclusion of the Conference of fruit growers in the Crystal Palace, Mr. J. Cheal proposed a resolution to the following effect—namely, "That it is desirable an Association of fruit growers should be formed for the promotion of profitable fruit cultivation, and to improve the methods of distribution. The Executive Committee of the Conference being requested to prepare a report on the subject, to be submitted to the next meeting at the Crystal Palace, on October 11th this year." In pursuance of this resolution the Executive Committee met at 5 p.m. on Thursday, September 27th, at Anderton's Hotel, Fleet Street, T. Francis Rivers, Esq., in the chair, twelve members being present. The Chairman referred to the favourable notices accorded by the daily and horticultural press to the Conference at the Crystal Palace, and it was mentioned that over sixty reports and articles referring to it had been published. A draft of the Association was then read, considered at some length, and finally adopted.

The adjourned Conference will be resumed at 2 p.m. on Thursday, October 11th, at the Crystal Palace.

The following is the draft adopted at the above meeting, and all desirous of joining the Association should communicate with the Hon. Secretaries, Mr. Lewis Castle, Hotham House, Merton, Surrey, or Mr. William Earley, Ilford, Essex.

The title will be, "The British Fruit Growers' Association."

OBJECTS.

To promote the profitable culture and the improvement of fruit in the United Kingdom, and to facilitate the distribution to consumers.

METHODS.

It is proposed to effect these objects by the means of meetings and conferences in the metropolis and the provinces ; the collection from all districts of reliable information bearing on the subjects, its dissemination through the daily and horticultural press ; by the publication of annual reports with such others of a special character as the funds of the Association may permit ; and by securing the adherence of local societies to the object of the Association.

MEMBERSHIP.

A subscription of not less than 5s. annually shall entitle any person duly elected to membership of the Association, including admission to all conferences and general meetings, one copy of each publication issued by the Association, and such farther privileges as may be subsequently determined. First subscriptions to be paid at the date of joining, and subsequently annually on January 1st.

OFFICERS.

The officers of the Association shall comprise a President, Vice-Presidents, a Treasurer, and two Honorary Secretaries.

COMMITTEES.

The business of the Association shall be conducted by the officers, a General Committee of forty members, an Executive Committee of fifteen members, five to form a quorum, and special Sub-Committees to be elected by the latter, the officers being *ex-officio* members of all Committees.

ELECTION OF MEMBERS, OFFICERS, AND COMMITTEES.

Proposed members of the Association to be nominated by two members and elected at any meeting.

The officers to be elected annually.

Ten members of the General Committee to retire annually, but to be eligible for re-election ; the retiring members in the first two years to be decided by ballot, and subsequently in the order of election. Nominees for the Committee to be proposed and seconded by two members of the Association at the annual general meeting. All elections to be effected by open voting.

The Executive Committee to be elected by the General Committee

from amongst themselves after the general business at the annual meeting.

MEETINGS.

The annual general meeting shall be held in December of each year to receive the report of the General Committee, for the election of officers, Committees, and the transaction of any other important business.

The General Committee shall hold at least two meetings, and the Executive Committee shall meet as often as necessary, in each year. The Executive Committee to decide the dates and places for all meetings and conferences.



NEW ROSES.

Of the new Roses sent out this and last year I have grown the following in sufficient quantities, and with sufficiently close daily observation, to offer the following remarks upon them, in case it may interest some of the readers of "our Journal."

Teas.—Château des Bergeries, Dr. Grill, Duchesse de Bragance, Luciole, Madame A. Etienne, Madame Honore Defresne, Madame Scipion Cochet, Mdlle. Elizabeth de Gramont, Princess Beatriee, Ye Primrose Dame, The Bride, Duchesse d'Auerstadt, Madame Hoste, Madame Joseph Godier, Mdlle. Henriette de Bauvan, and Princess de Sagan.

Hybrid Teas.—Madame Joseph Desbois, Madame Carle, and Mdlle. Germain Caillot.

Chateau de Bergeries.—Fairly vigorous in growth; the flower a pleasing, clear, palish yellow, but opens badly out of doors; with me not very satisfactory.

Dr. Grill.—A good healthy grower; flower very pleasing in calm, bright weather, well-formed, opens well, fairly large in size, and is a pleasing garden Rose of salmon rose colour.

Duchesse de Bragance.—A moderately vigorous grower, free blooming, well formed, nearly globular flower of good medium size, clear Australian gold colour, rather paler on outer petals; under glass, say for March blooming, I have a good opinion of and value this Rose, then very pretty and an acquisition.

Luciole.—A most unique, æsthetic kind of Rose; most distinct flower; a mixture of carmine, rose, yellow and fawn; fairly vigorous grower and free blooming; best under glass, and will, I think, be a good forcer; bud long, flower double, petals rather weak.

Madame A. Etienne.—Fairly good grower and bloomer; flower fine, distinct form; colour clear, pale, rosy pink with whitish base of petals; not so good a Rose as I at one time expected.

Madame Honore Defresne.—A good vigorous grower; flower full and rather large; colour deep clear yellow; outer petals reddish; opens badly.

Madame Scipion Cochet.—I think this is perhaps the best open ground Tea of the French Roses of last year, good grower, fairly free bloomer; flower large, well formed, opens well; and reminds me something of Princess of Wales in form and colouring.

Mdlle. Elizabeth de Gramont.—Seems a dwarf descendant of Gloire de Dijon, but quite different in colour, being bright reddish rose with yellow; good dwarf; healthy grower of stout wood and short joints.

Princess Beatriee.—A splendid Rose under glass, excellent for forcing; most lasting flower, and beautiful clear yellow, then good grower and healthy; not so good in the open with me.

Ye Primrose Dame.—Moderately vigorous grower, best under glass; pretty well formed flower; pale yellow in centre, nearly white outer petals.

The Bride.—The best and most beautiful Tea since Catherine Mermet, of which it is in every way a fac-simile, except in colour, which is a white with yellowish tinge; splendid.

Duchesse d'Auerstadt.—My plants of this have grown so strongly I have seen no flower shoots as thick as my little finger, and 6 feet long, chocolate red coloured shoots and leaves; a strong climber evidently.

Madame Hoste.—The best French Tea of this year in my opinion, and a decided acquisition; good healthy grower, flower deep petalled, large, and moderately full, opens well, blooms freely, colour whitish, with yellow at base of petals at times.

Madame Joseph Godier.—This is something like Dr. Grill, and not remarkable in any way, but a pleasing garden Rose.

Mdlle. Henriette de Bauvan.—This seems to me as if it might be a seedling of Madame Eugène Verdier Tea, growth in shoots and flowers remind me strongly of that Rose. So far I cannot say I expect great things of this last Rose of Lacharme, but I hope it may turn out better than I now expect.

Princess de Sagan.—This Rose seems to me merely a crimson China, both in growth and flower. The colour is a rich deep shaded velvety crimson, but I have seen no flower larger or better than a flower of Eugène Beauharnais.

Madame Joseph Desbois and Mdlle. Germain Caillot.—Very similar in the flower, which is very like that of Captain Christy. Rather uncertain growers I have found both of them; but the flowers are beautiful, and I think both will appear on the exhibition table at times.

Madame Carle.—A distinct, moderately vigorous, short-jointed grower; flower almost like a Camellia, varying in colour from that of Cheshunt Hybrid to a much brighter colour and more velvety. The flower is only moderate in size, and it is only a garden Rose.

So far as a few plants only will enable me to form the beginning of an opinion, I am much pleased with Miss Ethel Brownlow, and think anyone may venture to add that Rose to their list.—S. S.

THE MANETTI STOCK.

Mr. J. W. Murphy in last week's Journal asks for an explanation of some paradox which he imagines to lie in my note of 20th inst. in our Journal. I stated that in my opinion, derived from my personal experience, the Manetti is worse than useless, for if most Roses cannot live without it, they will not live with it in many soils. The meaning of this is, if many Roses cannot make roots of their own and thrive on them, such will die soon on the Manetti in many soils.

I also stated, I even think some good Roses have gone out of cultivation chiefly through Manetti, and instanced Olivier Delhomme, and further stated Marie Baumann hates that stock. How often from many quarters do we hear of Marie Baumann as a poor "miffy" grower. Now, I say from experience, grow it on the Briar, and then decide. With me Olivier Delhomme, a splendid Rose, durable and healthy on the Briar, or even on own roots, is miffy and soon dies on Manetti. I named the above merely as instances.

Prophesying is not at all in my way, but it is well to note the tendency of things, and I certainly think this is to discard the Manetti for whole classes of Roses by many good Rose-growers. Compare the present with fifteen years ago in this respect.—S. S.

It is time Mr. Murphy learnt to take his part in an argument without throwing out insinuations against his opponents. His reference to my "fertile imagination" can only bear one translation.

Mr. Murphy must know that insinuating that I draw on my "fertile imagination" for my facts will not make the Manetti the proper stock to grow Roses on, if it is not so already. Your correspondent mentioned my name in this matter in the first instance, or I should not have made any reply. In his remarks on page 287 he mixes me up sadly with another correspondent, and seems to expect me to answer for both. He gives a quotation, "Most Roses cannot live, except when budded on the Manetti," and asks me what I think of it. In reply, "I think it's a mistake."

Now Mr. Murphy says all the chief prizes won by nurserymen are won with Roses grown on the Manetti. Possibly this is so, but I do not see how this affects what has been said by me. Page 262: "It is notorious that Roses on the Manetti make a grand growth, and bloom well the first year with the nurseryman." Let us see what Mr. William Paul says: "That the plants grow more vigorously the first year we do not deny, but their subsequent decline is also more rapid."—(Page 156, 1881 edition, "The Rose Garden.") Let us see what Mr. B. R. Cant says: "The Briar cutting is my own especial pet."—("Rosarian's Year Book, 1888, page 20.) The Rev. Mr. Pemberton says, "As cuthacks I do not like them when pruned they lose heart, and break very feebly.—("Rosarian's Year Book," 1888, page 22.)

Mr. Murphy says that many thousands of the Roses he saw at Newtownwards were old plants. I am afraid he is mistaken here; it does not pay nurserymen to keep Roses many years. I should like to know how many prize blooms are cut from over-year plants, not necessarily at Newtownwards, but in all the nurseries in the kingdom. If I made a guess I should say not one-thousandth part. They all, or nearly all, come from the maiden plants.

I should like Mr. Murphy to tell me how many Roses he has altogether in his collection; how many he has which are seven or eight years old; and how large, or rather how small, his blooms are.

The Manetti is most certainly unsuited to my soil. There is nothing like experience; and if anybody will plant side by side Roses on the Manetti, and the same on the Briar, I am content to await the result. Mr. Murphy asks, "Would the nurserymen combine to disappoint their customers?" &c. In reply to this, I say I see no signs of combining among the nurserymen, neither can I see any wrong in growing Roses on the Manetti. The public buys them with its eyes open, and according to Mr. Murphy prefers them.

Why Roses are grown on the Manetti:—

1, Because Manetti cuttings are easily made, and strike more certainly than Briars.

2, Because the sap runs earlier in the season, enabling budding to be commenced early, and continues running late, enabling budding to be extended far into autumn.

3, Because this stock is much easier to bud than the Briar, and takes more surely.

4, Because the Manetti makes splendid plants, and gives fine blooms the first year.

5, Because they can be sold cheaper than Briar plants, which suits the public.

The fact that Manetti Roses perish should not, in my opinion, be laid to the charge of the nurseryman. It is not his fault; he grows Roses on Manetti because his father did so before him, and he does not feel disposed to change. When the public demands Roses on the Briar, then the nurseryman will provide them.—D. Gilmour, Jun.

A discussion has been raised in the columns of the Journal upon

the lasting qualities of Rose plants on the Manetti stock, and one staunch supporter of the foreigner in his vigorous onslaught upon "D. G." asks for the opinion of others upon the subject. Since we had but a few stocks yearly, just as many as my sister and I can manage between us—we have no Rose man—my experience is certainly a limited one, and it must be taken for what it is worth. We have tried the stock in question on many soils but a really good Rose soil, and whether on light land with a gravel subsoil or stiff yellow clay, it makes no difference, the Manetti is a failure as regards its lasting qualities. We have discarded it as a stock for the last two years, and are gradually getting rid of all cut-backs budded upon it. Perhaps it may find favour with some large growers for the following reasons:—1, Cuttings of it strike well; 2, It does not ripen as soon as the Briar, and so may be budded when these have ceased to run. Another advocate states that he has plants on Manetti "over twenty years old, and still vigorous and healthy." Then I should say they are really flourishing on their own roots, with the Manetti just existing but required no longer. This, at least, is how plants on Manetti serve us; and I do not like own-root Roses for exhibition purposes. The seedling Briar, perhaps, requires more care as a stock; but when budded it certainly with us produces finer and more lasting plants than any cutting stock, and I believe it to be the stock of the future. The foreigner must go home.—JOSEPH H. PEMBERTON.

IT would be an interesting contribution to the Manetti controversy, on which there is much to be said on both sides, if someone would write to say he had lifted Manetti-worked Rose plants, not less than, say, five years old, on which no sucker had ever appeared, and found good living Manetti roots to them. I have never succeeded in such cases in positively identifying any of the live roots as belonging to the Manetti; and if, as some think, the Manetti invariably dies sooner or later if it cannot form a shoot of its own, there is no hope of sustained life for a Rose budded on it except in making roots for itself, which it generally succeeds in doing more or less. If this be true the flourishing old plants of Mr. Murphy and Mr. Russell are simply Roses on their own roots, and it seems to be doubtful if the Manetti can properly be called a stock at all in the usual acceptance of the term.

But Mr. D. Gilmour is probably mistaken in thinking it will therefore fall into disuse. It is easier and more certain in budding, and makes more wood the first year than any other stock, and these qualities alone render it a most desirable one to use for the propagation of new and valuable H.P. Roses. It is also early to grow and to bloom, and many H.P.'s do well on it the first year. "S. S." speaks of Marie Baumann disliking it. I cannot get this Rose to do well on any stock; it seems to be deteriorating, as it used to be considered the one Rose always good in any season. But the best twelve I ever saw of it, shown by Mr. B. R. Cant, were cut, his foreman told me, almost entirely from Manetti. Messrs. Harkness also use Manetti exclusively I believe for H.P.'s, and Mr. R. N. G. Baker, the present holder of the amateur champion challenge trophy, used to rely upon it very largely if he does not now. Lesser lights in the Rose world, like myself, may well consider these examples, but some will succeed where others fail.

I, though quite willing to be convinced, can do nothing with it, except in "manufacturing yearly Roses," which I find to be quite worth while in the case of some varieties; and I suppose it is no crime for an amateur to do this, especially if he gives the plants away in November, and honestly tells the recipients of his bounty that they will not grow.—W. R. RAILLEM.

PROGRESS OF FRUIT CULTURE.

JUDGING from what is taking place in the West of England, the rising generation will undoubtedly be better supplied with home-grown fruit than has been the case for some years past. On all sides large numbers of the most serviceable varieties of fruit are being or have recently been planted, and I am informed that the demand for Apple trees especially is so much on the increase that stocks for grafting purposes cannot be bought under at least twelve months' notice. Excessive zeal frequently needs a wholesome check, as it is easy for an enthusiast to err in planting in a wrong place; and also what may not after all prove really profitable to anyone. An orchard situated far away from a large town or from a railway would be a doubtful investment, and should be avoided as much as possible.

Those who are on the point of commencing hardy fruit culture on a large scale cannot be too often warned against putting all their eggs in one basket. In other words, it is most unwise to depend solely upon one or two classes of fruit. It is the mixed orchards that pay much the best in the long run, as in these a general failure rarely, I may say never, occurs. By failure I mean in the sense of no crops resulting, as, unfortunately, it is possible for immense crops of some kinds of fruit, notably Plums, to be obtained, and a loss be the consequence owing to the difficulty of obtaining remunerative prices after railway and other much too heavy charges have been met. The intending planter ought not only to seek competent advice as to what should be planted, but he ought also to look well ahead in order to feel certain he will be able to dispose of his produce to the best advantage. Inexperienced capitalists or landed proprietors who may fortunately have a good sum of money at their disposal, ought to be told that there are no Heaven sent or born fruit growers, and all should walk before they attempt to run.

Much depends upon the nature of the soil, and more especially the subsoil, as in some districts it would be little short of madness to attempt fruit-growing on a large scale. I may be told that it is possible to improve and render almost any land fit for fruit culture; but granting this for the sake of argument only, the question yet remains, Would it pay to do this? I say no. A good site may be a decided gain; but here again the question arises, What is a good site? As a matter of fact, the experienced planter would much prefer to establish several orchards in different positions rather than be confined to one site. In this way he guards against a huge failure. The low-lying orchards stood the drought well last year; and thanks to this and the shelter afforded were but little injured by cold winds, and are the most productive this season. At least such is the case as far as my experience goes, and at all events I have it on the best authority that the distributed orchards on one large property are a decided success, no mistake being made in planting in that way, a general failure not having resulted since the outset, or say for five consecutive years. It is the owners of landed property that should do the planting, even if they do not actually conduct the experiment to a successful issue. Not only have they every advantage in their being in a position to select various sites, but they have also the knowledge that they will not, at a short notice, be obliged to quit the land and leave to others the benefits that ought to accrue to themselves. The least that those who rent land can do is to insist upon having it on a long lease, or say not less than a twenty-five-years term.

Some may have been debarred from planting with the idea that several years must elapse before they get any adequate return for their outlay. If any ordinary Apple or Pear orchard is planted, it is several years before much fruit can reasonably be expected; but the experienced or well-advised planter closely crops the intervening spaces till such times as the trees cover the whole of the ground. Rows of bush fruits are planted between the standard trees, and between the former are grown Strawberries. The latter are the first to be productive, and remain profitable till such times as the Gooseberries, Currants and Raspberries want all the space. All the latter eventually make way for the now large and most profitable Cherry, Damson, Plum and Apple trees; and in this manner not more than one or the first season is lost. This introduces another advantage attending the system of extending the planting over a series of years rather than making one large plantation at the outset, as, in addition to gaining good experience as to what is the most reliable, the requisite supply of small fruits is kept up. It is the latter that will always prove the most constantly prolific; and if a ready sale is found for this class of produce will in the end be found the most remunerative.

Here comes in the greatest difficulty all fruit growers, whether on a large or small scale, have to contend with—viz., the uncertainty attending the marketing of the fruit. This ought always to be faced and well thought out before any planting is done. As a rule most small towns are fairly well provided with fruit, or at any rate few are capable of absorbing all that is produced in their immediate vicinity in years of plenty. Of the difficulties and the disappointments attending upon a system of packing and sending the bulk of the fruit to a great distance, there is no need for me to enlarge. This part of the subject is only too apparent to all but quite superficial observers; and if such fruits as Cherries, Plums, Gooseberries, Currants, Raspberries and Strawberries have first to be carted a considerable distance to a railway station, and eventually handed over to the tender mercies of the salesmen in markets, it is a bad look-out for the grower. Enthusiasts overlook this difficulty, and I am afraid have in many instances persuaded others that they have only to grow the fruit, and the demand will follow. On no class does the uncertainty of a fickle climate or the difficulty of effecting ready sales for a glut of fruit fall more heavily than it does on the proprietors or holders of small plantations or orchards. Unlike the large proprietors, they have no system of insurance, their eggs, to repeat a homely phrase, being all in one basket; and as a rule, they find large and regular buyers always prefer to do business with those who can guarantee a good and heavy supply every season. Apples and Pears can be sent away or stored, and good fruit can usually be sold to advantage; but, as I have tried to prove, these alone will hardly pay.

Evidently there is good room for numerous jam factories, and a never failing demand for good, wholesome preserved and bottled fruits generally, as well as for crystallised and dried fruits. One very large plantation or series of orchards is capable of keeping a large factory well employed all the year round; and if a number of smaller growers would co-operate, these, too, might share in the profits attending the business. A factory would absorb all the fruit grown; and if in the hands of an independent firm would

yet give a good price for every hundredweight of sound fruit sent in. I have seen enough of fruit culture in the western as well as in the home counties to convince me that the only wise course of any would-be successful fruit grower is to first arrange for the sale of the produce, as it is very certain the plan most generally in vogue of packing and sending the bulk of the fruit to a great distance is a very risky speculation.—W. Iggulden.

DOVER HOUSE, ROEHAMPTON.

This, the seat of J. S. Morgan, Esq, is at all times of the year worth a visit, if only to see the manner in which it is kept; indeed, it is quite a Heckfield in that way. Visitors are also sure to meet with a hearty welcome from Mr. Forbes, the gardener in charge, who, if time permits, will not leave much unseen. The entrance to the glass department from the drive leads through a long avenue—not of Wellingtonias or any other choice Conifers, but two magnificent rows of Scarlet Runner Beans, quite a novelty in their way. It is not intended here to give a detailed account of all that was seen during a too hurried run round, but a few principal items. Several houses containing Peaches and Nectarines were passed through, the trees where the crops had been gathered looking the picture of health, while the fruit, ripe and ripening, indicate that they received all the good things necessary for their perfect production. One advantage here was noticed – namely, that the houses, be they for Peaches or Vines, were not crowded with miscellaneous plants. The varieties of Peaches are numerous, while the fruits are particularly well coloured and abundant. The same remark applies to the Nectarines, one tier of Pine Apple was so good as to cause a halt to examine the fine fruits. The vineries do not produce sensational bunches, but good serviceable examples of capital quality. The Black Hamburghs are of a deep black colour not always seen; the Muscat of Alexandria bunches are assuming that clear amber tint so pleasing to the cultivator, while the foliage on all the Vines was stout and leathery, the wood well ripened, showing that enough and no more was allowed to be carried by the Vines, which were about six years old. Tomatoes were especially noticeable, occupying several houses, all showing judicious selection and cultivation. Occupying the front part of some of the houses with the latter were healthy Fig trees bearing good crops.

A capital span-roofed stove about 40 feet long, 18 or 20 feet wide, was well stocked with medium sized and small healthy plants, which will, if they grow at the same rate for long as they are now doing, will soon need more space. In this house was noticed a special feature in the manner of arrangement of the plants. Instead of having the different plants all over the house they were arranged in blocks of one sort, as for instance Crotons occupied a space to themselves, followed by another one of Dracænas, and one of Pandanus Veitchi. Round the edges of the stages Panicum variegatum formed a neat edging, and contrasted with the plants above. Upon entering the house splendid trusses of Ixora Duffi were noticed quite dazzling in colour. A good stock of Anthurium Schertzerianum was noticeable, also Cypripediums, including healthy plants of C. Sedeni amongst others, with Palms in variety, just the size for furnishing. Particularly effective was some well grown plants of Abutilon Sellowianum marmoratum, the marble-like markings of their large leaves showing to perfection amongst other colours. In a lean-to Melon house were about three dozen plants of Acalypha musaica in various sizes from 9 to 18 inches high, having magnificently coloured large leaves, quite the thing for effective decoration. The variegated Ficus showed to advantage in the same house. In a Strawberry house were numbers of Maidenhair Ferns in small pots. A lean-to house with a northern aspect was filled at the back with healthy plants of Camellias, such useful varieties as alba plena and imbricata being well represented. The back wall of one Peach house was well covered with Heliotrope. Of Carnations as many as 12,000 are grown, Gloire de Nancy and the old Clove being planted in large masses by themselves, the plants showing by the grass produced that they are quite at home. Souvenir de la Malmaison is grown here in large numbers and in great excellence. The bedding-out was of the ordinary type usually met with in gardens. Several walls were neatly clad with Irish Ivy.—R.

GROWING PARSLEY FOR WINTER.

The preservation of Parsley in a fresh and green state during the winter season is frequently attended with much difficulty where the convenience of frames is not available for this purpose. In the more northerly counties, indeed, Parsley is only to be procured at much expense during nearly six months out of the twelve. The leaves of this useful vegetable when grown in the open ground are generally destroyed by frost; but if the circumstances attending their destruction are fully considered, it will be found that the stems are most rapidly affected where the soil is stiff and moist, and where the situation is exposed to cold cutting winds. The plant, however, does not appear to be so delicately constituted but that it may be had with comparative ease all the year if the ordinary conditions of growing the less hardy plants during the winter are observed. Some varieties are, perhaps, more susceptible to cold than others. The finest sample I ever saw was grown on the west coast of Scotland by a village schoolmaster. It was of a beautiful green colour, and of a remarkably vigorous habit; but growing in a low situation and exposed to cutting sea gales, the leaves always died down during winter.

In ordinary situations Parsley may be grown successfully on a border having a south aspect, and protected from the north by a wall. The soil should be light and rich. A quantity of stones and brick rubbish should be laid at the bottom to the depth of 7 or 8 inches, so that the bed may be raised considerably above the general level of the ground, and thus insured against excessive moisture. The surface of the soil being properly raked, seed of the most curled variety that can be obtained should be sown very thinly, either in shallow drills or broadcast, and slightly covered with fine soil. This operation should be begun in May or early in June, and if the weather continue dry frequent waterings will be necessary. The young plants will have sprung up in six or seven weeks, and when large enough they must be thinned out to 5 or 6 inches apart. They will have become large and vigorous by the end of autumn, when a number of stakes should be driven into the ground along each side of the bed. These stakes should be of a thickness to permit of their being bent across and tied together so as to form a series of arches, and strong enough to support a covering of mats, which should be laid over them as soon as the weather becomes frosty and wet. During intense frost, especially at night, it may be necessary to increase this protection by doubling the mats; but this should be removed entirely while the weather is mild. The soil should be kept as dry as may be, and all decaying matter carefully removed from the plants. A bed 4½ feet wide by 10 long will contain as many plants as may be sufficient for an ordinary supply during the winter.

Parsley might also be grown on a sort of rockwork with great certainty and convenience, for on such a structure the roots and stems could be kept in that dry state which is so indispensable to their health and freshness in dull cold weather. For growing it in this way, it is recommended to sow a quantity of seed early in May in a bed of light rich soil on a south border. When the young plants are a little above the ground they should be thinned out to 6 or 8 inches apart, kept clear of weeds and watered as occasion requires. At the end of August or early in September collect a few barrowloads of moderately large stones, selecting such as are best suited for forming a rockwork. They should be longer than broad, somewhat flat or even at the sides, so that they may lie firmly in their places when built up. Any kind of stones which the district may afford will do; but those of a sandy or porous composition should be preferred when a choice is offered. Bricks may also be used, but they are, perhaps, too flat, and do not present those holes and crevices which are desirable in the formation of rockwork, and which may generally be secured by the use of stones. The site being chosen in some sheltered open part of the garden, the stones and a quantity of good friable sandy loam, with some brick rubbish or rubble, should be collected together. The rockwork must be determined according to taste and requirements, in respect to form and size, but there is no use in having it too large. Perhaps the oval form is the most convenient for building such a structure; and if the base is 5 feet long, a pile may be raised with a surface extensive enough to grow a sufficient supply for an ordinary family. The stones used in forming the first tier or layer may be about 8 inches high and kept close together. A quantity of soil should be worked in at the back and sides so as to keep them together, while the centre may be filled with ordinary brick or sandstone rubbish. When the first layer is completed, a portion of the soil should be laid over the stones at the side, and a number of plants of Parsley, taken carefully up from the bed in which they have been growing, should be planted as regularly as possible in all the holes and crevices, their roots being spread out in the soil, and their stems and leaves kept inclined outwards at the margin. Having fixed the plants properly, proceed to erect a second tier in the same way, and so on with the others, till the pile is raised to the height desired; but with the subsequent tiers keep the stones 4 or 5 inches nearer the centre all round, and about an inch or so apart. Every stone should be placed directly over the point which forms the junction of those immediately below it; and every additional tier which is raised must be kept 3 or 4 inches nearer the centre than the one preceding it. In this arrangement of the several tiers the plants will not come directly over another, and the soil will not be washed down from the interstices by rain. If at the time of building the rockwork the weather is dry, the soil about the plants must be well soaked with water; but this must be done by limited supplies repeated several times, for if much water is poured on at once, a portion of the soil will run down. To prevent the action of drenching rains from having the same effect, it will be necessary to provide the winter covering at once. A number of stout ash sticks must be driven into the ground about 12 inches from the bottom of the rockwork, and attached by a good strong cord, so near one another that they may form an open arching figure at the top, and so placed that at any point they may be 12 or 18 inches clear of the plants. A covering of oilcloth or common canvas should be provided, and kept in readiness to protect the mound from heavy falls of rain until the soil has become consolidated round the sides. This covering will also be available during intense frost, when it must be carefully laid over the whole frame of sticks and removed whenever the weather is mild and open. In eight or nine weeks the pile will have become covered with strong healthy plants, which, besides affording a continual supply, will form an agreeable object both in summer and winter. It may be urged that by this plan of growing Parsley the roots are liable to become dry in summer; but in admitting the probability of such a circumstance, we must bear in mind that if the plants could be kept from growing too vigorously during the summer months, they would be in the best condition for preservation during frost. Now the drought of a hot summer would have the effect of retarding them and conserving their energy

until the time when their growth was most desirable. Besides, any extreme dryness could be very easily prevented by timely applications of water.—A NORTHERNER.

ERICA ANDROMEDÆFLORA.

MANY beautiful and distinct Heaths have now become rare in cultivation, and even when these plants were first favourites E. andromedæflora was never one of the most abundant. It is, however, a handsome species, and well worthy of attention. It is taller growing than the



FIG 35.—ERICA ANDROMEDÆFLORA.

majority, with long narrow leaves somewhat clustered on the upper portions of the stems. The flowers are exceptionally beautiful, wax-like in texture, the calyx pale flesh pink, the corolla quite a deep red, but there are several varieties, some having the corollas much more deeply coloured than others, while one has pure white flowers, A curiously spotted form has also been described under the name of triumphans. The species and its varieties are early spring flowering plants, and require the same treatment as other hardwooded Heaths from the Cape of Good Hope.

ENGLISH ARBORICULTURAL SOCIETY.

THE above Society held their annual excursion on September 21st at Chillingham Park, kindly granted for the occasion by the Earl of Tankerville. Most of the party met at Newcastle the night before, and journeyed to Wooler, where excellent provision had been made for them at the "Cottage Inn." In the morning at 9.30 they proceeded in brakes to Chillingham, arriving at about 11 A.M. They were received most kindly by Mr. J. Noble, the resident land steward, and Mr. Henderson, head gardener. Amongst those present were Mr. J. T. Robinson, Rowlandsgill; Mr. Fleming, Tudhoe; Mr. J. Smith, Langley Castle; Mr. B. Cowan, South Shields; Mr. Scott, Newton Hall; Mr. Wm. Fell and Mr. J. R. Brown of Messrs. Wm. Fell & Co., Hexham; Mr. Isaac Batey, Hexham; Mr. J. Davidson, Secretary, Haydon Bridge; Mr. G. Cooper, Gateshead; Mr. and Mrs. Foster, Wolsingham; Mr. Lonsdale, Rosehill, Carlisle; Mr. J. Peebles, Superintendent of Parks, South Shields; Mr. W. F. Taylor of Messrs. Little & Ballantyne, Carlisle; Mr. D. Smith, Seremaston; Mr. J. Matheson, Morpeth; and Mr. Coroner J. Graham, Findon Cottage, Durham.

The party then proceeded to view an old Norman church of date about 1220. There is an old baptismal font bearing date 1670, and a "leper" window is of rare occurrence in churches in the north. These were used for giving communion through to the afflicted, who were necessarily not permitted to enter the church. Close to the entrance is a very fine old specimen of an Elm tree, which is very much truncated. From there the party proceeded to the castle, which is also of Norman origin, is rectangular in form, has an inner court, four towers, the oldest of which bears date about 1100. The party was permitted to visit the state and private rooms, which were very interesting, containing a valuable collection of oil paintings and Japanese cabinets. Amongst the former most noticeable are those by Sir Edwin Landseer, who stayed a considerable time at Chillingham Castle, and limned one of the most remarkable pictures of the wild cattle, which is a standing record of the great artist's ability, and one of his best. The party here was joined by Mr. Jacob Wilson, Secretary to the Royal Agricultural Society of England, and agent to the Earl of Tankerville, who gave the party much valuable information as regards the castle pictures, wild cattle, the parks, Peles, and other interesting information connected with Chillingham Park, which was highly appreciated. From one of the towers a fine view is obtained of the surrounding locality, and the western side affords an especially effective view of the flower garden and grand drives. The garden is one of the old-fashioned sort, a mixture of Dutch, Italian, French, and Old English.

From the castle the party proceeded to view the park and famous wild cattle, where they were then joined by another trusty guide, Mr. Mechi, who has been park-keeper for over forty years, having charge of the wild cattle during that time. He is yet a lithe and hearty veteran, is full of humour, rich in anecdote, and can recount many strange stories of visitors from Royalty downwards. His appointment was through the advice of Sir Edwin Landseer, who has immortalised him in one of his grandest pictures—the death of a bull—along with the Earl of Tankerville gracefully reclining on the shoulders of his horse. On entering the park Mechi called the company together and told them to keep close to each other. The instructions were so imperative that the visitors were only allowed to whisper in case of disturbing the cattle, which are so wild that on the slightest approach of human footsteps they will scamper about for hours in all directions.

The sun was intensely hot, it was about midday, and a steep ascent all the way, still everyone was bent on seeing the cattle. Onward they went under Mechi's indefatigable lead, and were at last rewarded by seeing the cattle browse on what is now called the Prince of Wales' Plain. The spot was very near to where the Prince of Wales shot a fine bull in 1872. There were about altogether sixty-five, and were led by the king bull. They presented a most imposing appearance. They are all white, with the exception of the nose and eyes, which are black; the horns are gracefully incurved, and the tips are black; the back is even and level. Here Mr. J. T. Robinson took an excellent photograph of them. From there the party proceeded by way of the targate ground, where Mr. Robinson photographed the party with an excellent background of Abies Douglasi, Pinus austriaca, Picea Nordmanniana, and other fine Pines. Close by is Ross Hill, 1200 feet above the sea level, which is a very rocky eminence. It is said on a fine day ten castles can be seen from this fine hill. Next the party proceeded to Hepburn Hill, where lunch was partaken of. Some then ascended the rocky eminence, which is nearly perpendicular, to see an old Saxon camp, about 100 yards in diameter. From there the view is splendid. Nestled amongst the growth of fruit trees is the fine old castle with the Cheviot Hills in the distance. The scenery is rugged and wild.

The park is 1500 acres in extent, about 1000 for cattle, and 500 acres in wood. The Fox Nose is a fine belt of trees of Larch, Beech, and Scotch Fir, and in a wood named Wilson's Corner is a Japanese Spruce, 25 feet high, which is rather rare for the district. We saw beyond the

Prince of Wales' Plain a part of the old Caledonian Forest, which can be traced right through to Hamilton. It may be well to state that there is no exact account of the wild cattle, but such a learned authority as Storer states that from anatomical construction they are the pure type of the wild cattle, which were no doubt left intact through the preservation of this part of the old Caledonian Forest. In the home farm there are just now three steers crossed by a short-horn bull, these are three years, two years, and nine months respectively; the two former are a first cross, and are now being fed for show at Smithfield Cattle Market. As these are the first animals ever shown for open sale in the market they are sure to cause a great furore.

Near to the encampment we were shown Hepburn Wood, which is a natural forest, consisting of Alder, Oak, Birch, and Elm. This is another remnant of the Caledonian Forest. Near by are the remains of a very perfect bastile or Pele, the President of the Society, Mr. Cadwallar Bates, having lately published a book on the old Peles, interesting to antiquaries and archæologists, the lower portion of this had also a from the castle. In one plantation is a fine Silver Fir about 120 feet high, 11 feet 2 inches in diameter, and has about 90 feet of clear bole.

In the main entrance there is a splendid avenue of Lime trees. Near to these is a curious Oak, 22 feet in circumference, for 10 feet high. The base is not rough but very broad. In one of the horse-pasture fields are Oaks, Plane trees, and Limes planted twenty-five years ago, that were about 20 feet high when they were shifted, the operation having proved a great success. From these through King James's Gate we entered the finely terraced garden (fig. 36) already referred to. It is on the west side of the Castle. From the bottom of the grassy terrace is a level plateau of about 130 yards long, the northern boundary is an embattled wall, which is profusely clad with very fine creepers, Clematis Jackmanni, Cydonia japonica, Maréchal Niel Rose, Wistaria, Ampelopsis Veitchi being amongst the number. All the beds are geometrical figures, and as it is a mixture of all the old styles the effect is most pleasing. Some beds of Roses, apparently Fellenberg, are within little Yew hedges, and these margined with Alpines in circles, consisting of



FIG. 36.—CHILLINGHAM CASTLE FLOWER GARDEN.

dungeon. Visiting the castle and gardens again, Mr. Mechi pointed out an interesting reminiscence of fairy lore. Beside a fine Oak tree is a ring nearly oval of about 20 yards in diameter, and in the centre is a hole amongst stones, the herbage is completely worn away, and yet Mr. Mechi, after forty years' constant observation, has never observed a living animal of any kind round it. Of course the reader can imagine the interesting tales of this supposed fairy abode. In a dell there are some fine Coniferæ planted in pinetum fashion, including Picea Pinsapo, Cupressus Lawsoniana, 25 feet, Picea nobilis, and some Wellingtonias. Before entering the alpine garden along the Axis Walk are some fine double Thorns and Hollies. There are also some splendid trees of Spanish Chestnuts, 14 feet in diameter 3 feet from the ground. The alpine garden contains a very fine collection of plants and the American garden also. Hybrid Rhododendrons had made very good growths, and amongst them was Lilium giganteum, with a spike 10 feet high, these spikes had from sixteen to eighteen expanded flowers, and fill the air with their agreeable fragrance. Near it is a fine Yew hedge leading Sedum acre variegatum, Mentha Pulegium gibraltarica, Sedum glaucum, and Antennaria tomentosa. Phlox beds were also similarly designed. In the centre of some of the beds were Saponaria calabrica, a very bright Malva, its silvery foliage and Perilla nankinensis having an uncommon good effect. Scrophularia and Tropæolum Cooperi were also a pleasing combination. Of course in all these gardens Yew hedges form a conspicuous figure. There were four squares of about 20 yards surrounded with Yew hedges 2 feet high, top quite flat, and inside was neatly mown grass. Against the embattled wall was a fine ribbon border. Yellow and brown Calceolarias were very fine. Scarlet Pelargoniums and Pompon Dahlias formed an effective and appropriate arrangement for this fine flower garden.

The kitchen garden is oblong in form, enclosed in two divisions by very good walls. On entering we were struck with the splendid annual Candytufts we have never observed so large, and the same may be said of Malopes, Sweet Peas, and Sunflowers. The kitchen is well stocked with Apple trees. Mr. Henderson finds Prince Albert do well

amongst the other usual varieties. Peas were in rows 8 feet apart, and were wonderfully good crops of that indispensable vegetable. Amongst varieties we noticed Telegraph very fine and Veitch's Perfection. The gardens were all stocked with vegetables, while on the walls were some fine examples of trained fruit trees. Peaches outside were a very good crop, but it is doubtful whether they will ripen. The glass structures are not very large, but good use is made of them. In three vineries 60 feet long we observed some well-coloured Grapes, berries large, the bunches not very heavy but well finished. The varieties were principally Black Hamburgh, Muscat of Alexandria, Buckland Sweetwater, and on the back wall was a splendid Brown Turkey Fig with large crop of fruits on. We had a quiet drive back to Wooler to dinner, accompanied by Mr. J. Noble and Mr. Henderson. The dinner over, thanks to the Earl of Taukerville, Mr. Noble, and Mr. Henderson, the success of the Society by the Chairman, Isaac Body, Esq., the reply of the Secretary, Mr. Davidson, and a quick run to catch the train brought to a close the happiest and most memorable outing that the Society has had.—BERNARD COWAN.

Notes & Gleanings

EVENTS OF THE WEEK.—On Tuesday, October 9th, the Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster. The Crystal Palace Hardy Fruit Show opens on Thursday, October 11th, and continues until Saturday. A conference and meeting of the British Fruit Growers' Association will be held in the Crystal Palace on the first day of the Show at 2 P.M. Sales of bulbs will be held on Monday, Wednesday, and Saturday at Mr. J. C. Stevens' rooms, King Street, Covent Garden; on Monday and Saturday at Messrs. Protheroe & Morris's rooms, Cheapside; and on Monday, Wednesday, and Friday at Messrs. Smail and Co.'s rooms, 123, Fenchurch Street.

—— NATIONAL APPLE AND PEAR CONFERENCE AT CHISWICK, OCTOBER 16TH TO 20TH, 1888.—A meeting of the Executive Committee was held in the Royal Horticultural Society's Gardens at Chiswick, on September 27th. Present—The Rev. W. Wilks in the chair; Messrs. Bunyard, Cheal, Herbst, Walker, Hibberd, Dean, Hudson, Turner, Rivers, W. Paul, and J. Smith. Papers to be read at the Conference were promised by Messrs. G. Bunyard, J. Cheal, J. Douglas, E. Tonks, S. Hibberd, J. Fraser, W. Wildsmith, E. J. Baillie, M. Dunn, McDonald, Tallerman, T. F. Rivers, Saunders, Bear, and W. Paul. Great interest was manifested in the proceedings, promises of support being received from the leading growers. It was agreed that the Conference be held in the Conservatory on Wednesday and Thursday, October 17th and 18th, the first day (October 16th) being devoted to the examination of the fruit, the General Committee meeting at 3 P.M. for the formal opening of the proceedings. It was agreed that no prizes be awarded, but cards of commendation for special merit will be given by the Committee. It was decided that the various papers be put in type, previous to the Conference, for the more convenient use of the Committee and press. The Gardens will be opened to the public at 1 P.M. on October 16th. Notices of intention to exhibit should be sent to Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, not later than Wednesday, October 10th.

—— SUCCESSFUL ORCHARDING.—We hear that 5 tons of Green Gages have been sent to market from the Mentmore orchards this season, and that the fruit realised 7s. 6d. per bushel.

—— MARIE LOUISE VIOLETS.—I send you a bunch of Marie Louise Violets. We have been gathering for several weeks from the open border, and are now about to remove our plants to their winter quarters in frames, where they will, all being well, supply us with frequent and valuable gatherings right up to the month of May next. Had we a failure with our winter Violets we should miss them indeed. —JOHN CRAWFORD, *Coddington Hall Gardens, Newark-on-Trent.* [Beautifully fresh and fragrant were the blooms received, and our correspondent may well appreciate them.]

—— ARAUCARIA IMBRICATA CONING.—For the information of the Rev. W. W. Wingfield I may say these trees cone freely enough in various parts of England, even in the inhospitable climate of Derbyshire. I have had fertilised and matured seeds that readily germinate, but as the trade prefer foreign-grown seeds our home-grown are not worth the trouble required to produce them. I believe the ovule-bearing trees are more common than the pollen-bearing trees, as they are more frequently met with. I think they are readily distinguished by their dwarfer habit and dense compact dome-shaped heads. The female cones are green and grow erect on the points of the top growths; they take two years to mature, and attain a large size. The male or pollen-bearing trees are much taller growing and looser in habit; the catkins are brown, pendant, and they grow in clusters mostly on the points of the side branches, and sometimes at the junction of the one and two-year-old wood. The tallest male tree we have is 72 feet high, the tallest female 46 feet high.—J. H. GOODACRE, *Elvaston.*

—— THE WEATHER.—We have to-day (October 1st) experienced most exceptional weather in the Leeds district. Changing from sharp frost during early morning, rain commenced about 9 A.M. At 10 A.M. snow began to fall heavily, continuing until noon. The hills on becoming clear presented a most unusual picture, while taking a nearer view of various forest trees in full foliage borne down, of which English Elms, Purple Beech, and Spanish Chestnut, were truly grand, if such a term may be allowed; with 1 inch groundwork of snow the effect of scarlet Pelargoniums may be imagined.—E. BURTON.

—— FROST AND SNOW IN HARVEST.—Writing from Lincoln, a correspondent says:—"A sharp frost was experienced in the north of this county on Monday morning, the 1st inst., the roads being crisp and ice quarter of an inch thick. Dahlias, Tropæolums, Vegetable Marrows, and Kidney Beans were blackened in some gardens, but many escaped. Heavy rain fell from midday till evening with large flakes of snow. The bulk of the harvest is gathered in, though much remains to be secured. Apples and Pears are small, the crops light, and late in maturing."

—— GARDENING APPOINTMENT.—H. Charles, late foreman to the Right Hon. Lord Dynevor, Dynevor Castle, Llandilo, South Wales, has been appointed head gardener to the Rev. F. B. Teesdale, Whitminster House, Stonehouse, Gloucestershire.

—— AT Messrs. Harkness & Sons' nurseries, Bedale, long beds of GAILLARDIAS, &c, are in robust health from seed sown out of doors in March and transplanted when large enough in September or the following spring to where they are to flower. I saw varieties in bloom there fully equal to the high-priced ones, and the Gaillardia is a very easily cultivated plant.

—— THERE also can be seen many thousands of plants of the ICELAND POPPY in full bloom, proving that it is of the easiest cultivation, and should be in every garden. I was astonished to see the great breadth of ground set aside for these plants.

—— ABOUT 7000 plants from seeds of MRS. SINKINS PINK was another surprise, and with such luxuriant growth. Mr. Harkness succeeded in 1887 in saving seed which was sown in October in cold frames, and the seedlings planted out in nursery beds early in April this year, and a great many of the plants are now flowering, some differing from the parent, and many promising breaks amongst them, but the true test will come next spring. It was refreshing to see their deep green healthy growth, over 1000 plants have blooms, and not a single variety amongst them. Messrs. Harkness & Sons exhibited thirty blooms of these seedlings at the great Show in Manchester in September, and they received a great deal of attention.—D. S.

—— CARDIFF CASTLE GARDENERS' ASSOCIATION.—The second session of this Association was successfully inaugurated on September 25th by Mr. A. Pettigrew reading a paper upon the "Cultivation of the Pear on Walls.' As it was previously determined to throw the Association open to the gardeners of the district, there was a large attendance, the syllabus made out for the session being a very attractive one.

—— THE HESSLE PEAR.—As a free-bearing hardy orchard Pear this has no equal in the eastern counties. It is the only variety that is producing profitable crops in many orchards, some of the trees being of immense size and yielding from 50 to 100 pecks of fruit. They are in great demand in the markets, and large consignments are sent to London. The fruit is somewhat smaller than usual, below medium size, not particularly attractive in appearance, being brown and russety, but the quality is excellent, the peculiar flavour finding acceptance by most palates.—A TRAVELLER.

—— We regret to learn that Mr. F. A. Dickson of Chester died on Thursday last, September 27th, in his sixty-third year. He was the son of the late Mr. Francis Dickson, and the chief partner in the firm of F. & A. Dickson, of the Upton Nurseries, now amalgamated with J. Dickson & Son, as Dicksons (Limited). Mr. F. A. Dickson was elected Sheriff of Chester in 1868, and in 1870 was chosen as Mayor; he also held several other local offices of importance, and was much respected.

—— Gladiolus brenchleyensis.—This Gladiolus is capital at this time of the year planted among low-growing Heaths, Kalmias, Andromedas, hardy Azaleas, or dwarf shrubs, or around the edges of Rhododendron beds. The bright spikes give considerable colour to the otherwise dull-looking beds at this time of the year. The peaty soil also allows the Gladiolus free opportunity to root well, and consequently to send up good spikes of bloom. We plant the corms each year in March, taking them up in the autumn.—S.

—— What an excellent window plant is Vallota purpurea. It is largely used in the country both by amateur cultivators and cottagers; it seems to stand much hardship when not in bloom, and it is often thrust on one side to make room for a more showy plant. This kind of treatment appears to agree with it, as when September comes around again the same pot full of bulbs can be seen producing a number of showy spikes of flowers. One thing in its favour, it is not overpotted as a window plant, that and the rest it obtains through lack of water no doubt are in the favour of its flowering.—E.

—— At this season of the year Tritomas look well anywhere, but nowhere do they show to greater advantage than when planted singly on the grass, their brilliant spikes of bloom contrasting well with the green surroundings. Planted close to the edge of water they succeed admirably. Where T. glaucescens and T. Uvaria are both planted the flowering period is prolonged a considerable time, the former being the first to throw up its flower heads, and by the time they are over the latter is at its best. A fairly rich deeply trenched soil, and a good soaking two or three times during the summer with liquid manure, help the plants considerably.

—— Fuchsias are conspicuous in some beds at Battersea Park, and attract attention. They are also well represented in the flower gardens attached to some of the houses in the town of Hitchin, the plants being large and bushy, and loaded with bloom, remaining in perfection for a long time. Some of the older varieties, such as Rose of Castile, appear to predominate. In window boxes they are also freely employed, the drooping kinds hanging down and hiding the boxes completely. Eccremocarpus scaber, Tropæolums, and Cobæa scandens are trained up trellises over some of the doors and windows, rendering the town very interesting and attractive.

—— A Plague of Flies.—Mr. Bardney writes:—"Last week we were much troubled with small black flies. At times it was almost impossible to see for them. I think they are the ordinary green, black, and brown aphides. The Wheat has been covered with them. I fancy they are now on the wing, and if the weather continues mild and warm everything will be smothered with them. I am borne out in this opinion by the fact that those on the wing rendered our Peach trees inside nearly black, but we regarded them as harmless creatures. But this has not been the case, for nearly every leaf is covered with green, black, and red or brown aphides. The old ones are dead and dying. The spiders have been busy, for their webs are full of these annoying pests."

—— Good Peaches and Nectarines.—In my last note on Peaches and Nectarines for the open wall I quite forgot to mention "Dymond," which is so highly spoken of by Mr. H. Markham. I can fully endorse the praise he gives it, as we have a capital tree now bearing about seven dozen fruits at about a foot apart. The size is equal to any good Royal George grown under glass, and the colour very dense. It is now turning in, and the flavour is first-rate. I don't know whether other people's Peaches are the same, but those here are very highly coloured this season, in fact more so than last. The colour of the Nectarine is very deep. Dr. Hogg we are now using, and it has proved itself a good Peach out of doors.—A. Young.

—— In the garden of J. H. Tukes, Esq., Hitchin, are very interesting alpine rockeries, and a large herbaceous border, 150 yards long, is effective at the present time. Tropæolum speciosum is a brilliant hardy climber, and is growing and flowering freely against a wall trailing over some sticks that have been placed there. Another useful hardy climber is found in Passiflora Constance Elliott, which is also trained to a wall; it is loaded with its lovely white flowers hanging down in graceful festoons. In the tropical fernery above the rockery is growing a fine fruiting plant of Monstera deliciosa, reaching the full length of the house, with the long roots hanging down yards in length, apparently quite at home in the heat and moisture. Mr. Springham is the gardener.

—— I lately saw in the gardens at Rooksbury Park, near Fareham, a very effective circular bed containing a large plant of Tritoma glaucescens in the centre, bearing a profusion of large richly coloured flower spikes; around it were planted thinly roots of Helianthus annuus fl.-pl., the double perennial Sunflower. The combination of colours was very pleasing, looking down upon the bed from a distance and from higher ground. It is surrounded by a neatly kept undulated lawn, upon which are growing a good number of specimen Conifers. On the lawn in the same garden is a circular bed containing a dozen or more plants of Yucca filamentosa, now in flower, which produce a pretty effect both in the distance and upon a closer inspection, much more so than would the same number of plants dotted about in the shrubberies.—B.

—— Eucharis grandiflora.—I read with much interest Mr. Record's useful article on the treatment of Eucharis grandiflora. There is no doubt it will stand a cooler temperature than many people imagine. I once tried the plan. I wanted some plants to flower about the middle of November, and mine had been in flowering in July and again about January. After the flowering in January, I grew the plants on in the stove until the middle of March, then removed them to an intermediate house for about six weeks, thence to a cold pit, ultimately placing the plants outdoors in July, where they remained until the middle of September. The situation was shaded after twelve o'clock in the day. The plants received a good share of water or the foliage would have gone. As it was, however, the foliage certainly suffered somewhat, but not so much as might have been expected. When the plants were transferred inside, I first placed them in the intermediate house for a week or two, where they very soon began to show flower spikes. They were then returned to the stove, and I think these flowered better than at any time I had charge of them. The flowers were ready about a week earlier than intended, but I was highly satisfied with the experiment, as also was my employer.—J. P.

—— I was much interested in Mr. Record's experiment with Eucharis grandiflora, because I have practised the same method of treatment for several years though not to induce blooming, but to check the ravages of that pest, the Eucharis mite, which had got hold of our plants and greatly crippled them. In this the open air treatment has been completely successful, and it is satisfactory to find that the much-dreaded Eucharis disease can be conquered in so simple and inexpensive a manner. Our plants, like Mr. Record's, have usually been partially shaded when standing out, but I begin to doubt whether a more sunny position is not preferable. Certainly those which have been so placed this summer look more robust than the others. We give a month more of fresh air than your correspondent does, as our plants have only just been put under cover, and even now are in an unheated greenhouse.—B. D. Knox.

—— Chichester Gardeners' Mutual Improvement Society.—The first annual Exhibition of this Society was held on Monday evening, September 24th, in Little London, and was, on the whole, a decided success. The Society was formed in July, 1886, and monthly meetings are held, at which various subjects relating to horticulture are discussed, and certificates of merit awarded for the best productions. No prizes were awarded at this Exhibition, nor was there a charge made for admission, which had the effect of bringing up many hundreds of visitors. The Exhibition was really held to test the strength of the Society, with a view to holding future shows on a larger scale. The Committee had sent out invitations nearly all over the city, but there was no necessity for this, as the Show was extensively patronised. The principal exhibitors were Councillor Gatehouse; Mr. Kent, Salt Hill; Mr. Aylward; Mr. P. Robinson, The Warren; Captain Phillips; Mr. Clifford, Shiers. Cawley Priory; Mr. J. McRonald; Mr. H. H. Moore; Mr. Ayling, gardener to Dr. Tyacke, J.P.; Mr. Gardner, gardener to General Hardy, C.B.; Mr. Pusey, Hon. Secretary to the Society; and Mr. Hobbs. The exhibits comprised fruit, flowers, plants, and vegetables, and were without exception, of fine quality. Councillor Gatehouse's Orchids were much admired; Mr. Moore's cut flowers were a conspicuous feature in colour and variety; Mr. McRonald's "fire screen," artistically made up of various flowers, was a finely executed piece of work. Mr. Clifford exhibited a splendid group of Ferns; and Mr. Gardner's Dahlias were notable for their good quality. During the

evening a string band, organised by Mr. Pryer, a member of the Society, played a capital selection of music.



A CHRYSANTHEMUM SHOW IN CINCINNATI.

THE "American Florist" announces a grand Centennial Exhibition of Chrysanthemums at Cincinnati, Ohio, from October 22nd to October 27th next, when some extraordinary prizes will be offered. Only fourteen classes are enumerated, but the prizes range from 250 to 5 dollars. For "the best display comprising the largest number of well grown plants, all kinds," the prizes are £50, £30, and £10. For "the best fifty plants, all kinds," £20, £10, and £5 are offered, with £10, £5, and £2 for twenty-five plants. Smaller prizes are also offered for plants in such classes as the following :—"Best ten white," "best ten yellow," "best ten pink," and single specimens in the same way. There are only three classes for cut flowers. The first is for "the best display in variety, not less than 300 vases or glasses," the prizes being £20, £15, and £10. The others are of a similar character, with prizes from £10 to £2.

CHRYSANTHEMUMS AT DOVER HOUSE, ROEHAMPTON.

CHRYSANTHEMUMS are largely grown in the garden to produce large blooms, and from their appearance they will do so. Several hundreds of plants are cultivated for this purpose, the majority occupying a position in a newly acquired kitchen garden, a row of plants standing on each side of a high path in such a manner that they miss the winds and are exposed to the sun ; in fact, just the spot a cultivator would choose. The plants run on the big side as regards the wood and foliage, but nevertheless it is ripening well. Thunberg is 8 feet high, other sorts in proportion. Very fine in appearance are the plants of Val d'Andorre ; 10-inch pots are mainly used, and the plants had not needed much feeding beyond occasional supplies of soot water. The Queen family perhaps showed a soft appearance rather as compared with the other varieties. In this garden the Rundles and Glennys are still considered worthy of a place.—R.

JAPANESE CHRYSANTHEMUM DORÉE.

THIS new variety belonging to the early-flowering section is now flowering in the nursery of Messrs. W. & G. Drover, Fareham, and a very pleasing variety it is ; the colour is a soft yellow or deep primrose. The flower is of medium size ; the florets reflex thoroughly, forming a full bloom. It is a useful addition to the early-flowering class.

EARLY-FLOWERING VARIETIES.

This section of Chrysanthemums was well represented at the late Crystal Palace Show by the groups there staged in competition for the prizes offered. By far the best as representing the greater variety was that from Messrs. Davis & Jones, Camberwell, London, containing as it did the best kinds in this section. Intending growers of this section of the Chrysanthemum could not do better than select varieties from the undermentioned, which I noted as being the most meritorious. Mdlle. Leonie Lassali, creamy white, very free flowering, of good form ; Miss Davis, fine pink sport from Mrs. Cullingford, the flowers of good form ; Mrs. J. R. Pitcher, flowers soft pink, of capital form ; Toreador, small flower of a bronze colour ; Mignon, this is a capital sort, very profuse bloomer, dwarf compact habit, deep rich yellow. Salter's Early Blush, a rosy blush-coloured flower ; Nanum, creamy white, perfect formed flower, free ; St. Crouts, very free, pink in colour ; Lyon, a bright rosy purple ; Alice Butcher, a sport from Lyon, colour at commencement a deep red changing to orange ; Flora, a bright yellow, very free ; Blanche Colomb, creamy white ; not forgetting those favourite varieties Madame Desgrange, G. Wermig, and Mrs. Burrell.—E. M.

THE season has not been one of the best for Chrysanthemum growers generally. After a late cold spring a succession of dull wet weather setting in made a vast difference in the wood produced compared with last year, when the wood was as hard as Hazel. However, we have had three weeks of fine weather, which has improved the appearance of things much in the respect of the ripening process, though our plants which are grown for large blooms average a foot higher than last year, but there seems every chance of good solid blooms.

Our summer-flowering varieties have done well this season, perfecting well-formed blooms with full centres, which is sometimes a fault in summer varieties, having what is termed black centres. We have a good number of Madame Desgrange, G. Wermig, and Mrs. Cullingford, which we are beginning to cut freely. The two former are opening far better than they did last autumn, though the plants have been rather closely packed for want of room ; consequently the wood is soft, though the plants have abundant healthy buds. Mdlle. Leonie Lassali, a sulphur-white variety, is of a good stiff habit and very free, is about ten days earlier than Madame Desgrange. La Vierge is pure white, flowering through October, fine for cutting or for pot plants ; this is also a dwarf stiff-habited variety. Anna Liabaud is not so satisfactory, the flowers not coming perfect. The above varieties may be relied upon for a succession of useful blooms until Lady Selborne, Mdlle. Lacroix, and Elaine begin to open.

Earwigs have been troublesome ; these are now disappearing, but green fly attacked the plants about ten days ago, and seem likely to be troublesome until we get the plants housed, when fumigating thoroughly will be tried. Tobacco powdering or syringing is of little use, as the pests are seeking protection on the under leaves as the nights become colder.—A NOTTS GROWER.

SEASONABLE WORK.

EVERY attention must be paid to those plants that are to yield large flowers. The majority must be under cover, and the remainder placed where they can be protected or lifted inside in case of frost. Early frosts often compel the housing of these plants to take place before it would otherwise be necessary, the thermometer having already fallen 2° below the freezing point. These light frosts do not appear to do harm, but they do the plants no good, and protection from such influences should be provided. When the plants are housed be careful not to crowd them, for it is important to preserve their lower foliage until the last. The preservation of the foliage insures the activity of the roots, which must be farther assisted by top-dressing and judicious feeding. Admit abundance of air at first and avoid unduly exciting the plants, or the flower buds will come forward too rapidly to insure their being of good size and perfect form.—A GROWER.

NATIONAL SOCIETY'S CATALOGUE.

IN looking through the above Catalogue I note that in the characteristics of incurved it is said the bloom should be as nearly a globe as possible. In my opinion this would have been better had it read in this way—"The incurved flower should be of globe form, but as much deeper as possible." With all good judges and growers the depth of an incurved bloom is the most essential point. What would be done if a second prize winner declared that the first prize blooms do not correspond with the characteristics of an incurved bloom should the stand contain flowers which are of extra depth ? Qualified adjudicators will always acknowledge depth in a bloom as the first consideration, and I fancy deep flowers are more easily found at the present date than they were, say, fifteen years ago.—E. MOLYNEUX.

REVIEW OF BOOK.

The Tuberous Begonia, its History and Cultivation. *By* CONTRIBUTORS TO THE "GARDENING WORLD." London : 17, Catherine Street, Strand, 1888.

IN a compact book of 106 pages is embodied all the information that can be required concerning the Tuberous Begonia, representing the work of several hands, prepared under the direction of Mr. B. Wynne. The history of the species, the origin of the cultivated forms and their culture both indoors and out, are treated at length in several chapters. Numerous illustrations are given of the leading varieties or types, and portraits of Mr. R. Pearce, Mr. John Laing, and Mr. H. Cannell are also included.

The following extracts give some idea of the scope of the work in the historical portion. The cultural instructions are reliable and elaborate.

THE FOREST HILL STRAIN.

"It was in the year 1875 when Mr. John Laing of Forest Hill whose portrait we have the pleasure to introduce into these pages, after some years of patient labour bestowed on the improvement of many of our most important florists' flowers, turned his attention to the Tuberous Begonia, for which he believed there was a grand future as a greenhouse decorative plant. How he has succeeded in the development of the plant to a pitch of excellence at first undreamed of all the world now knows, and we can only express our regret here that we are unable to give more than a general idea of how the marked improvement has been brought about by him. Mr. Laing commenced cross-breeding with B. boliviensis, B. Veitchi, B. Pearcei, and the following varieties—Vesuvius, Dr. Masters, Mrs. Masters, and Dr. Hooker ; but the seedlings obtained in the following year were not of a promising character, but little improvement being visible. He then obtained all the varieties he could get of other raisers, both at home and on the Continent, which he crossed with his own seedlings, and *vice versa* ; and the next season had the pleasure of raising several sorts which were decided improvements. This little success gave a fresh impetus to the work, and by adding to his stock the best new varieties sent out by other growers, and saving seeds, carefully fertilised, from the finest sorts, had the results of fifty-seven different crosses to sow in January, 1878 ; and from these sowings great advances were obtained. In the summer of the same year Mr. Laing exhibited at South Kensington a group of seedlings which fairly startled the floral world, and to which the Royal Horticultural Society awarded its gold medal, many of the varieties being also distinguished by the award of first class certificates. Then was the Tuberous Begonia characterised as 'the coming flower.'

"In the same year the Messrs. Veitch sent out their Queen of Whites, which turned out to be a splendid seed or pollen parent. Mr. Laing crossed it with Henderson's White Queen, and *vice versa*, and in 1879

obtained some 500 seedlings, all of which bore white flowers, and which marked a great improvement on all the white-flowered varieties then in cultivation. They varied greatly in habit, but all bore fine flowers, and a selection of the tallest-growing sorts was named Reine Blanche, while the dwarf growers were matched and named Stanstead Bride. The former was certificated the same year, as also was Stanstead Rival, a variety selected out of the same batch, which marked the greatest advance of all, and which was the first variety that had nearly erect flower stems and round flowers. Other fine seedlings raised the same year were Princess of Wales, Lady Hume Campbell, Exoniensis, and J. S. Law; and some fine dark seedlings, among them being a very small, nearly black variety, of no use for general cultivation, but which was kept for hybridising purposes, and which was one of the progenitors of the splendid dark crimson bedding varieties which were so much admired by all visitors to the Messrs. Laing's nursery last autumn.

"In 1879 renewed energy was thrown into the work of cross-fertilising, Mr. Laing having so many improved flowers to work upon, and in the spring of the following year he had 161 different crosses from single and double varieties, Stanstead Rival being the most extensively used variety on account of its stiff habit and erect flower stems. Reine Blanche and Lady Hume Campbell were also extensively used, and from the seeds obtained that season were acquired still further advances in shape, size, substance, and colour, in the latter point especially. The later sorts obtained at Forest Hill have been obtained by constantly selecting the largest and finest shaped flowers for crossing, the results therefrom being the grand strain now offered as 'Royal Begonias.' Mr. Laing has truly done wonders for the Begonia, and in no way can this be better illustrated than by comparing the flowers of the first hybrid, B. Sedeni, with one of Mr. Laing's greatest achievements, Queen Victoria.

THE SWANLEY COLLECTION.

"Some two years after Mr. Laing took the Begonias in hand, Mr. Henry Cannell commenced their cultivation at Swanley, and as showing what progress he has made, we may mention that in 1877 he offered for sale only nine Begonias, including B. octopetala and B. Frœbeli, which, as we have before observed, have taken no part in the production of the magnificent varieties of the present day. Sedeni, Dr. Masters, Stella, and Vivicans were among the tuberous varieties, offered together with B. boliviensis and B. Pearcei. The following year thirty-eight sorts were offered for sale; but four of them do not belong to the tuberous type as now recognised. The greater number of these were of continental origin, and few of them now figure in collections containing the more modern improvements. Three doubles were mentioned – namely, Louis Van Houtte, W. E. Gumbleton, and Argus, together with a semi-double, Notaire Beaucarne. In 1879 twelve doubles were described, and ninety-six singles, including six of other species. A good sprinkling of them originated in this country, including White Queen and Queen of Whites, but still the continental productions were most prominent in this collection. The doubles numbered twenty-two, and the singles about a hundred in the following year, necessitating classification into different colours, of which the variety even then was most wonderful. In 1881 the double varieties numbered twenty-nine, and in the following year forty-two, with a corresponding increase of single-flowered sorts. At least thirty-five of the double forms were of continental origin, and even at this time they began to show some of the freaks and peculiarities for which they are noted. Some of the flowers mimicked those belonging to other natural orders, and a new section was created for those having serrated margins to the sepals, an indication of a tendency to revert to ordinary foliage leaves.

"More progress seems to have been made with the single varieties in this country, and six are specially mentioned as having been raised by the Messrs. Cannell, including three yellow and two buff coloured varieties, which owe their origin to B. Pearcei as one of the parents. A house of 150 feet in length was set apart for them at Swanley in 1881, and what is equally interesting, a number was planted out in the experimental garden there, and which withstood the following winter, flowering well the succeeding year. The double varieties numbered fifty-two in 1883, and were mostly or all, as before, of continental origin; in 1884 they numbered sixty-five; in 1885 forty-four of the older varieties, together with thirty-five new ones, are described, including the beautiful late-flowering Camellia-formed white Octavie. In 1886 112 doubles were described, including seventeen new ones obtained from France and Germany. Last year (1887) 119 doubles were described. An inspection of them shows that they have mostly been derived from B. Veitchi and others of that type, having broad leaves and broad rounded petals; a few have also been obtained from B. Davisi. During the last year or two Mr. Caunell has been most successful in raising double varieties, and now possesses a number which mark a great stride onwards. Some dozen or more of these will be offered next season.

"Mr. Cannell cannot be described as a raiser of the Begonia in the same sense as Mr. Laing, but he has grown them by tens of thousands, and has rendered horticulture good service by constantly introducing the best of the continental novelties, and exhibiting them in a condition that few can surpass. Mr. Cannell during the last quarter of a century has been a power for good in the horticultural world, inasmuch as that, perhaps, no man during the same period has sent out so many grand florists' flowers. During the same period, we must also add that he has, by indomitable pluck and energy, built up a business of considerable magnitude, and that, too, under circumstances which would have deterred many another man from attempting the task."

GRAPES SCALDING.

THE discussion on this subject grows more interesting. Mr. Simpson in your last issue advances some very pretty theories, but I am sorry to say they are unaccompanied by hard facts. It is an easy matter to advance ideas, but quite a different matter to substantiate them. I have given some stubborn facts, none of which Mr. Simpson has cleared away. He wishes to remind me that Lady Downe's and Black Hamburgh grown in the same house cannot be compared, for they would not pass the critical stage at the same time. But what if they were treated alike till they had both passed the stoning process? The case I placed before your readers, page 261, was where Lady Downe's is planted in an early Black Hamburgh house, and the former scald while the latter never lose a berry. I will now endeavour to show Mr. Simpson that both varieties did pass through the stoning process under the same conditions. When the Black Hamburghs commenced stoning, a light was left open a little way above the Vine of Lady Downe's, and the bottom light also on hot days (which were very few). Now that light was never moved except for rain during the whole period, and the ventilation always given so as to prevent the condensation of moisture on the berries. If both are as liable to scalding, I say, why did one variety escape and the other suffer?

Mr. Simpson repeats that Black Hamburghs grown with little heat are as liable to scald as the other variety in question. I think I have proved conclusively that such is not the case, for the Black Hamburgh did not receive more air as suggested by Mr. Simpson, as the secret of their generally escaping the evil. Again I say there is no comparison relative to the scalding propensities of these Grapes. Mr. Simpson says that the treatment of the range in question being exactly alike accounts for the evil. How so? Neither would he think of treating early and late Grapes alike, neither should I. But when they are all started in March and ripened in September I fail to see where the comparison comes in in this particular case.

I still adhere to my former statement that it would require gross carelessness to scald Black Hamburghs, but not so the Lady Downe's. Mr. Simpson asks if it is gross carelessness to scald the one, what is it to scald the other? Well, I should say slight mismanagement, for the slightest cause will scald Lady Downe's, but I have never accomplished the feat of so treating the Black Hamburgh, for I still hold it a feat. I have no pet theory to advance why Lady Downe's should scald more than other Grapes; but still the fact is there. If, as our friends would have us believe, it is entirely due to atmospheric conditions, I say why should it scald more than other varieties? If due only to external surroundings, why should not the thin-skinned varieties be affected? for to me it appears feasible that a thin-skinned variety should scald sooner than a thick one. I am fully convinced that the reason why Grapes scald more than others under the same circumstances has yet to be explained. As I am always open to conviction, I shall be pleased to acknowledge it if any reader can explain the reason satisfactorily.

I see that there is one point that Mr. Simpson and myself are agreed upon—viz., we do not object to a few degrees rise or fall in any fixed temperature. I feel flattered in obtaining such an admission. Strange to say, the "fixed temperatures" Mr. Simpson so kindly gives for my future guidance have been my fixed temperatures during the past season, of course allowing the few degrees either way. Our night temperature was 65° as nearly as possible, and the airing of the house during the day, especially the early morning, was always to guard against the condensation of moisture on the berries.

Like Mr. Simpson I take great interest in Grape culture, and shall be pleased to obtain any further information on the subject. I think the subject of great importance to all gardeners alike, and I trust they will come forward with their opinions on the subject.—JAMES B. RIDING.

I HAD not overlooked Mr. B. Riding's communication on pages 260 and 261. I have been waiting Mr. Young's reply in the last issue. I gladly welcome the spirited criticism that my letter has brought out. Three correspondents are agreed that it is "fancy" on my part to affirm that Black Hamburghs will scald as badly as Lady Downe's, and which can only be accomplished by "gross carelessness." If a professional gardener of the stamp of Messrs. Riding, Young, and Kirby had scalded their Black Hamburghs until their bunches were "bits" instead of full bunches it might be termed "gross carelessness;" but with the young gardener or amateur growing Grapes perhaps for the first time any such accident could not be due to carelessness on their part, for they may have exercised every care that their knowledge warranted. It was the inexperienced I tried to instruct, and amongst whom I did not include your three correspondents; but I can already perceive they too have something to learn on this subject, and therefore my communications may be of service to a wider circle than I had anticipated.

All three would lead us to believe they repudiate the theory that scalding is constitutional, and yet they are firm believers in the theory if we draw conclusions only from their writings. If it is not constitutional with Lady Downe's (do not misunderstand me, I argue that it is not), why should that variety be subject to scalding and all other varieties not? This they say is the case, but the arguments they have adduced do not prove that they are right and I am wrong. If I admit for the sake of argument that to scald the berries of Black

Hamburgh as badly as Lady Downe's is "gross carelessness," I do so conditionally that the scalding of the latter is due to the same cause. I have never suggested that these two varieties grown together in the same house would both scald, but I should be surprised if Lady Downe's did not under the conditions to which it is subjected by Mr. Riding. On this point Mr. Simpson has hit the right cause. The Black Hamburghs will have completed the stoning period long before Lady Downe's, and the treatment it is then subjected to is the cause of scalding. The treatment the former receive after they are stoned is too forcing for Lady Downe's during the critical period of stoning.

Your correspondents have overlooked one of the main points to which I attributed scalding. They will find in the third paragraph, page 162, that I there wrote, "Overforcing, whether due to an increased temperature by sun heat or the anxiety of the cultivator to push the crop forward when Nature requires to move slowly, will certainly end in scalding, to a greater or less extent according to the amount of forcing to which the Vines may be subjected." Here is the secret of Lady Downe's scalding in Mr. Riding's two early houses. Overforcing at that critical period will cause Black Hamburgh or any other Grape to scald. Who would expect anything else to take place when Lady Downe's and Black Hamburghs are grown together? Who would expect Sea Eagle or Walburton Late Admirable Peaches to do satisfactorily in an early house with Hale's Early Peach or Lord Napier Nectarine? If the two latter had the treatment they required to bring them forward quickly to have them ripe as early as possible, who would be surprised if the two late varieties threw off the whole of their fruits or split their stones? If complete success with the latter was anticipated, then the early varieties would have to be materially retarded in their favour. Why should Grapes be an exception? Take the early Peach and Nectarine named; overforce them during the stoning period, or just before they have finally completed stoning, and what would be the result? Would not a fair percentage of the fruit fall, if not all? Why, then, should your correspondents single out Black Hamburghs and other early and midseason Grapes as not being liable to be affected in the same way? Scalding is not always due even in the case of Lady Downe's to "gross carelessness" in ventilation. Natural conditions over which the cultivator has no control render it next to impossible to regulate the day temperature to prevent it proving too forcing to this particular Grape during the time it is stoning. Overforce in like manner Black Hamburghs or any other variety during the time they are stoning, and I will guarantee any of your correspondents can scald them as badly as Lady Downe's. Ventilate as freely as you like in the morning, and until the temperature commences declining, and then close the house so as to run up the temperature considerably, and the berries will be scalded. This can be done before and after the stoning period without the slightest harm. Shade the house but maintain a high temperature, and the berries will be scalded. I think this is clear that scalding is not entirely due to the action of the sun striking on the berries while they have condensed moisture upon them. My advice then is, whether the Grapes are early or late, to let Nature at this critical time take its course, and suspend, as it were, for the time being forcing operations. It is wiser to err on the side of keeping the temperature rather too low than to attempt to excite the Vines at this stage. The only certain way of carrying Lady Downe's safely through the stoning period without scalding (I am writing of those growing in a late house) is to raise the night temperature slightly and ventilate the structure during the day like a greenhouse, so that the Vines have time to complete the important work in which they are engaged. During bright hot weather keep the day temperature as low as possible, and the cultivator will be rewarded with bunches, not "bits."

Mr. Young says the latter part of my article needs no comment if I keep to the text; it is merely a comment upon the matter he introduced into his first letter, and which if foreign to him is not foreign to the subject at issue. It is perhaps convenient for Mr. Young to ignore those portions of my article that tell against him. It is, to say the least, only a poor way of conducting a discussion—to pass over questions that need an answer by asking questions in return. But the amusing part of Mr. Young's letter is, that he asks questions on a matter that is practically foreign to the subject, and at the same time advises me to stick to the text. What has the price of Grapes to do with scalding? The market grower to whom I alluded syringes his Grapes until they commence colouring; all the varieties that he grows receive the same treatment in this respect. The work is not done by experienced hands. Last year I saw the Grapes, and the work had been entrusted to a boy who had never had anything to do with Vines before. His reward for keeping the Vines free from red spider was a new suit of clothes in addition to his wages. He earned it, and I have no doubt received it. The quality of the Grapes may be judged when it is stated that some of them were staged last year against those from such men as Messrs. Hunter and McIndoe, and gained the premier position for six bunches amongst ten competitors; again, first for Alicantes, seven showing in the class; third for any other black with Lady Downe's; for the heaviest bunch of Grapes, second with Alicante. That is not a bad record at one show, and in company of some of the best Grape growers in the country. Is this grower for the market "worthy of the name?"

"What causes moisture to condense on the berries?" asks Mr. Young, and he answers this question by saying, "Why, an overheated atmosphere, caused by the sun shining suddenly on the house without sufficient ventilation, as well as insufficient heat in the pipes to prevent the berries becoming cold." This is, I should think, the vaguest statement on the condensation of vapours that has perhaps ever appeared. It would be as well if Mr. Young would take the trouble to look up somebody's theory on the "Liquefaction of Vapours." The condensation of vapours may be due to three causes—cooling, compression, or chemical affinity. Condensed moisture on the berries of Grapes is due to a low temperature; and the berries being naturally colder than the atmosphere, they cool the air in contact with them, and the consequence is some of the vapour it contains is quickly deposited. As the temperature rises the air takes up the moisture which it has previously deposited, and the result is evaporation. Instead of condensation taking place when the temperature rises, evaporation takes place and the air is charged with heated vapour that practically "stews" the berries unless means of escape for it have been provided. Condensed moisture is a natural process, and vapour is deposited in the form of dew under natural conditions most nights in the year, and why should Grapes be an exception, that it should injury them? The condensed moisture does no harm, but harm is the result of the artificial treatment to which the Vine is subjected by not providing means of escape for the moisture evaporated by the sun raising the temperature.—Wm. Bardney.

It is very good of Mr. Simpson of Knowsley to give your readers, and Mr. Riding especially, what he appears to consider an infallible recipe for preventing the scalding of the berries of Lady Downe's; but as I have practised that system for some time without obtaining the results promised I fear Mr. Riding will not benefit very materially by following the advice; but probably he has already experienced failure under the conditions laid down by Mr. Simpson. When I took my present charge I acted on the experience acquired under one of the best Grape growers of his day in this or any other country in so far as the vineries are concerned, but I did not obtain immunity from the scalding of Lady Downe's. I had ventilation when the temperature rose to 70°, still scalding was prevalent. It was given at 6 A.M., scalding continued. The ventilators were left slightly open at the top and lower part of the house all night; but all of no use, scalding of Lady Downe's continued. Finding that the evil was not to be checked by usual or unusual methods of ventilating I turned my attention to the "damping" process. Orders were given for the late vinery to be damped once only in twenty-four hours. After two or three days there was an apparent diminution of scalding, but not an entire cessation. However, this was encouraging; we were on the right track. The word was passed that water was to be entirely withheld. This was done; and as soon as the atmosphere was as dry as it is supposed to be requisite to have a Muscat house when the Vines are in flower scalding ceased. The fire was kept going night and day from first to last, and the ventilators were kept open night and day until the berries commenced colouring. The vinery is heated by a flue. There are two fixed lights at the top at the east end and one at the west end. The front ventilators consist of small shutters 18 inches by 10½ inches opening inwards, and from the bottom upwards fixed in the front wall. The nearest lower ventilator is 4 feet from the end (east). The angle of the roof is about 60° from the horizontal, or 30° from the perpendicular. I give these particulars because the vinery in some respects is similar to the kind indicated by Mr. Bardney. Under the fixed lights at the east end is one Vine of Black Hamburgh. This never has any scalded berries. The next six Vines are Lady Downe's; then follow two Gros Colmans which never scald; and the last are three Muscats which are liable to be scalded by the western sun if not shaded.

Mr. Simpson's dictum that Black Hamburgh does not scald when grown under the same conditions as Lady Downe's, because the former is slightly in advance of the latter, is as fallible as his rule for prevention of scalding. The Black Hamburgh has less air, but yet is only about ten days in advance of the Lady Downe's at the stoning period; and as the scalding and stoning periods vary from three weeks to six weeks, it follows that both must be under equal conditions for scalding so far as that is concerned, but according to Mr. Simpson the Black Hamburgh is under the worst conditions, because it is not "so freely ventilated," and therefore the "secret" is a myth, a mere fancy.

It is a notorious fact that Lady Downe's is prone to scald up to the colouring period under conditions that such kinds as Black Hamburghs would be safe, and whether it is constitutional or not it remains a fact and is not a "fancy." I am aware that it is possible to grow Lady Downe's without scalding taking place, and I have so grown them, but it was in a vinery having ventilators the whole length of the house, and glazed with rolled glass. The question at issue is not whether it is possible to grow Lady Downe's without scalding taking place, but whether it is more prone to scald than other varieties grown under equal conditions, no matter what those conditions are. Mr. Bardney did not qualify his conditions.—A. Bighter.

In answer to Mr. Simpson, the cause of Lady Downe's Grape being more likely to scald than any other Grape is a physiological subject beyond me. Probably some scientific readers would advance their opinions. I fail to see any logic in Mr. Bardney's question to me. The inconsistencies advanced by Mr. Simpson in support of his argument or theory will probably be answered by Mr. Riding.—A. Young.

Your correspondent Mr. Young is quite right in saying that Lady Downe's scalding can be prevented by those in charge. A few years since in the south of England I was troubled by Lady Downe's scald-

ing. To remedy it I left ventilation on during the night, kept the pipes just warm, and discontinued damping in the morning, which I found was the best course to adopt. I have never found other Grapes scald if ventilation is attended to early in the morning, and think it would be gross carelessness if Black Hamburghs or other Grapes were allowed to scald.—T. SLADE.

THE MADRAS AGRI-HORTICULTURAL SOCIETY.

IN the course of the annual report issued by the above, the following notes occur on tropical plants introduced or cultivated in the Madras presidency through the influence of the Society:—

ECONOMIC PLANTS. The grievous depression amongst the planting community of Southern India mentioned last year unhappily still continues and paralyses private enterprise in the direction of new introductions. The stock of such plants is, however, still kept up in the Society's nurseries in hopes of better times reviving the demand. Numbers of Maragogipe Coffee, Erythroxylon Coca, Lance Wood, Mahogany, Landolphia, Trincomallee Wood, Edible Prickly Pear, and other useful plants are still available.

CHOCOLATE.—The large tree of Theobroma Cacao, under the shade of the Coconut Palms, succumbed to the drought, but another plant a year or two younger growing near it not only survived, but seemed not to suffer. The old plant was isolated in the grass, so had no protection but the shade overhead, and got only such water as was given to it directly by hand; while the survivor is in the new border closely surrounded, sheltered, and shaded by the Coconut Palms and the young trees and shrubs in the border, and got the full benefit of the periodical floodings of the border. The Honorary Secretary is still of opinion that the cultivation of Cocoa might very possibly be successful in Madras if the cultivators would take the same trouble as the growers of the Betel Leaf do in Bengal, to shade, shelter, and irrigate their crop.

RUBBER PLANTS.—The Landolphia plant successfully ripened its crop of fruit, and from the seeds Mr. Gleeson raised about eighty plants, which were in due course placed at the disposal of Government for further experiment. Orders have been issued to various officers to take over the plants and try them in climates and situations which are expected to be favourable to their growth and development. The Castilloa elastica plants still thrive.

BREAD FRUIT.—A batch of root-cuttings of the tree which bears the seedless Bread Fruit was obtained through the kind offices of Mr. Logan, the Collector of Malabar, and the Superintendent hopes to raise from them a few good plants. A large rooted plant was also obtained by Mr. Robinson, the Chief Engineer of the Madras Railway, from the western coast, presented to the Society, and planted at once in the Coconut tope where it is showing great promise. Three other fine plants are thriving, planted out in the gardens, two having been presented by Mr. Lovery, and one being the survivor of a number received from Dr. Trimen, Ceylon. In view of Mr. Lovery's success in growing and fruiting the tree, and of the healthy and vigorous appearance of the young trees in the gardens, the Committee sees no reason why this tree, such a safeguard from famine as it might be, should not be found growing by the side of the channel of every irrigation well in Madras. The Committee is informed that Mr. Lovery has interested several of the wealthy Brahmins living in and about Mylapore in the subject, the produce of the tree being specially suited to the needs of their community. The Society is of course willing, and anxious, to do its best to obtain plants from Ceylon or the western coast, for everyone who is prepared to pay the cost, which should not come to more for each plant than that of a young grafted Mango.

TREE TOMATO.—The Committee still hears frequently from the hills of the great success of its introduction, thanks to Mr. Morris of Jamaica, of Cyphomandra betacea. Unfortunately the plant will not grow on the plains, but in the cooler climates of Southern India it is an unqualified success, and its popularity continues to increase. Happily its fecundity is so great that the Society has no difficulty in complying with demands for seed by applying to some of its correspondents in more favoured localities.

PRICKLY PEAR.—A few inquiries have been made during the year for plants of the Edible Opuntias introduced from Cyprus and Malta, but no report has yet been received of their success. In the Society's Gardens plants of both are well established and growing freely, but have not yet fruited or even produced perfect flowers by which they could be identified. The Society's collection of Cactaceæ has been greatly enlarged by gifts from Poona, Calcutta, and elsewhere during the year, and it is hoped that progress may shortly be made in naming them all correctly; but, with the exception of the naturalised species, and two or three others, plants of this order do not appear to flower freely in the climate of Madras.

CARLUDOVICA PALMATA.—In August, 1887, three plants of this Palm were received in a Wardian case from Dr. Henry Trimen, Director, Royal Botanic Gardens, Ceylon. Two of them unfortunately died, but the third promises to grow well, and is now five or six times as large as they were when they arrived. The following interesting account of the plant and its uses is extracted from the "Treasury of Botany":—"Common in shady places all over Panama and along the coast of New Grenada and Ecuador. Its leaves are shaped and plaited like a fan, and are borne on three-cornered stalks from 6 to 14 feet high; they are about 4 feet in diameter and deeply cut into four or five divisions, each of which is again cut. The Panama hats commonly worn in America, and now becoming common in this country, are manufactured from these leaves. Those of the best quality are plaited from a single leaf without any joinings, and, as the process sometimes occupies two or three months, their price is very high, a single hat often costing 150 dollars, and cigar cases of the same material £6 each. The leaves are cut whilst young, and the stiff parallel veins removed, after which they are slit into shreds, but not separated at the stalk end, and immersed in boiling water for a short time, and then bleached in the sun."

PARITIUM ELATUM (The Mountain Mahoe).—Seeds of this plant were received from Kew on 19th July, 1884, from which a few plants have been raised. Two of them have been planted in the border in the Coconut Tope where one of them is very promising, being now about 23 feet 9 inches high, and 9 inches in girth, at 3 feet from the ground. It is stated that this plant "affords the beautiful lace-like inner bark called Cuba bast, at one time only known as a material used for tying round bundles of genuine Havannah cigars, but afterwards imported, particularly during the Russian War, as a substitute for the Russia bast used by gardeners for tying up plants; it is now largely substituted by other materials. The tree, which is found only in Cuba and Jamaica, grows 50 or 60 feet high, and yields a peculiar greenish-blue timber, highly valued by the Jamaica cabinet-makers."

MORINGA.—A species of this tree, M. pterygosperma, *Gaertn.*, is well known to Anglo-Indians as the producer of the "Horse Radish" used on the plains, and less generally as the supplier of the main constituent of "Drumstick curry." There is another representative of the family with finer and more beautiful foliage in the gardens, where it has stood a solitary specimen for many years without flowering. Interest was excited in the subject by "The Kew Bulletin," which, in its first number mentioned another species which produced a tuberous root, reported to grow, and be valued as food by the Arabs in the Desert. The Honorary Secretary wrote to the Director of the Royal Gardens, Kew, on the subject, who kindly sent the Society, in May last, three roots which he described as "in the resting stage." From the account given of this plant it would probably be a very valuable introduction.

INGA DULCIS.—As usual the Society has sent on application to Ceylon, Penang, and all parts of India, particularly the north, large quantities of this invaluable and most versatile tree. It is probably the most universally cultivated tree in Madras, being as general for hedging and nearly as good as the Hawthorn in England. It bears any amount of clipping and chopping, or worse, nibbling by sheep and goats, and gnawing by horses and cattle. If attended to it forms an impassable fence, if neglected grows into a noble "Bullfinch." It sows itself and grows on all waste land, and that even with its roots in salt or brackish water. Single or surviving hedge plants grow into grand timber trees. The timber is used by the husbandman for cart building; the wood is specially appreciated by the brickmaker; the leaves and twigs furnish a never failing forage for the poverty stricken feeder of milch goats; birds, beasts, and boys scramble for the plump arillus which encases its seeds; and in the hot weather while the grass is too dry to be eatable, the hungry cattle eagerly devour the tough outer pods.

CASUARINA MURICATA.—Experiments and inquiries are now on foot to ascertain and bring to notice the value of this tree as a producer of timber useful for building purposes, pavement, and other economic uses, as it seems positively wicked to chop up trees 100 feet high, straight as a dart, and girthing at breast height 5 or 6 feet, for fuel, which is practically the sole use to which they are now put. Mr. Chisholm, the late Consulting Architect to Government, has spoken very highly of the timber for building purposes; and Mr. Thorowgood, the Engineer of the Madras Harbour Works, is now making experiments with it for the pavement of level-crossings over the Beach Railway. Mr. Thorowgood's experiments are yet in their infancy, but it is believed that the traffic will prevent the white ants, the bane of woodwork in the tropics, from doing much mischief, and that the cement in which the blocks are set will prevent warping, to which this wood, being immature, is specially liable. Should the trial be a success, it may be expected to revolutionise the dusty thoroughfares of Madras.

On 29th April, 1879, papers were read before the Institute of Civil Engineers which, amongst other facts, demonstrated that hard tough wood should be selected to creosote, creosoted beech pavement on Sunderland Bridge having worn less in fourteen years than granite sets in four years; that it is an absolute necessity for wood pavement that it should have a thoroughly good concrete foundation, and that the cost of maintaining wood pavement to get seven years' life from it is one-eighth, and of scavenging one-sixth of Macadam. With such facts before us there can be no doubt of the advantages of wood pavement generally, and there appears to be every probability that Casuarina timber will, on fair trial, be ascertained to be specially well suited for the purpose. The planting of the tree on a large scale has been practised for so short a time, and the wood has been so much used in an unmatured state for fuel, that comparatively little mature timber has been handled, but in hardness, toughness, density, and specific gravity it is almost unrivalled. Hard wood is scarce and costly in Europe, and if it should appear on experience that Casuarina wood is equal to or better than other woods in use, Madras has in her hands a source of almost incalculable wealth.

Another reason why experiments which may lead to the retention of growing trees till they reach something like mature age should be pressed and encouraged, is that the price of Casuarina wood for fuel has fallen during the last fifteen months nearly 30 per cent.; large plantations in the market can find no purchasers, and petty owners are grubbing up their young trees to realise before the price falls still lower without

any intention of replanting. Should large clearances be made followed by the abandonment of the fuel-planting enterprise, the results may be disastrous. The indigenous and established sand-binding plants have been smothered by the Casuarina trees, and the consequence of the removal of the latter can only be the transformation of, at a moderate estimate, fifty miles of coast line north and south of Madras, metamorphosed in the last twenty years into fine forest, into a chain of bare and blowing sand-dunes, the inland edges overlapping and hopelessly destroying the cultivated land, while those on the seaside contribute a liberal quota to the already surcharged streams which threaten to choke the new harbour.



KITCHEN GARDEN.

Mushroom Beds.—Those who have been collecting material for Mushroom beds lately should now make them up. Cultivators differ in opinion as to the best position for beds. Some adhere to the old heated houses, others grow them in sheds and outbuildings, while many make up the beds in the open and grow them well there. We approve of all ways so long as they suit the grower and the beds are made up the same in all cases. As is well known, horse droppings are the best of all materials for Mushroom growing. We have known good crops produced from manure from the cow sheds, but prefer the horse droppings, only the beds need not be exclusively composed of these. Turf and soil, and even leaves, may be mixed with the droppings. We have often placed pieces of soil as large as the fist in the beds, and when the Mushrooms appeared some of these were crowded with them. The manure should be gathered into a heap, turned over frequently to allow the superfluous moisture to escape, and do not add the soil until the bed is about to be made up. If the soil is very dry it will be an advantage, as it will absorb the moisture from the manure and prevent it heating too much. The beds may be from 3 feet to 5 feet in width, and from 1 foot to 18 inches in thickness if they are under cover, but if in the open they should be made up like a Potato pit with a ridge about 4 feet up in the centre, and a sharp slope to each side. The manure should be trodden and beaten as firmly as possible, the object being to make it retain the heat until the Mushrooms are growing freely. We have lately formed a bed in the potting shed. It was made one day and spawned the next. Two days afterwards the thermometer indicated 90° as the temperature of the bed, and now it is 95°, but the heat will not increase, and the holes in which the spawn were inserted, although left open to allow the superfluous heat to escape, will be closed in a day or two and the soil put on. As long as the temperature does not rise above 100° there will be no harm done. Indeed, a high temperature is necessary to make the spawn run and penetrate the bed everywhere. We have known Mushroom beds fail through lack of heat, and when they were broken up the pieces of spawn were as hard as on the day they were inserted.

Tomatoes in the Open Air.—The recent bright weather has improved these a little, but not sufficiently to make the crop of 1888 a success. There is now no chance of this, and this is the worst season we have experienced for Tomatoes in the open during the last dozen years; but one bad year in twelve is not discouraging, and in another year we shall try to extend their culture in the open, as it is an easy way of securing much good fruit. Our plants have failed to gain their usual strength, and the fruit is scarce, but the most must be made of what has been formed, and care should be taken that none of it be injured by frost. A few degrees will make the fruit spotted and diseased, and then it is useless, but if the fruit is cut off before it is injured and hung up in a warm glass house or room it will ripen slowly, and prove very useful in November and December. The fruit does not require to be fully grown to ripen in this way, as those not over half grown will ripen as well as those that are fully developed.

Late Vegetable Marrows.—Peas and some other choice vegetables are not so plentiful as they were, and as autumn advances it will be more difficult to secure variety, but Marrows may be kept on for a long time. Many of the fruits are ripe and hard, indeed unfit for cooking, and if these are allowed to remain on the plants until the leaves die more young ones will fail to form, but if every old fruit is cut off numbers of young ones will form and swell at once, and these will give a supply until about Christmas. We always secure fine late young Marrows by being careful in cutting the old and matured fruits at this time.

Kidney Beans.—Both the runners and dwarfs are exceedingly tender. The slightest frost will destroy the foliage, and then the supply of pods will cease. The dwarfs are the easiest to manage in late autumn. Where they are in good condition still and growing in close rows, if some frames are placed over the best of them and cover them with lights at night the supply may be kept for some weeks after the exposed ones are destroyed. Hoops and mats placed over a few rows are also beneficial. Our latest runners are in flower, but we fear they will never form pods. Quantities have been gathered from earlier rows and sent into the kitchen to be salted in jars for winter use. When this is properly done they may be served on the table throughout the winter, and very few will be able to tell them from pods newly gathered. Where pits for forcing are numerous a sowing of dwarf Ne Plus Ultra Kidney Beans should be put in now. Fill sixty, eighty, or one hundred 3-inch pots half full of good soil, place six or eight seeds in each, put a little more soil over them, and stand them near the glass in a house or pit where the night temperature is about 70°, or a little less. Here the plants will appear in a week, and when from 4 inches to 6 inches high transfer them into 7-inch pots. Two or three may be placed into each of the larger pots, and if well supplied with light, air, and heat they will grow robust and prove very fruitful by December.

Tying up Endive.—The best way to blanch autumn Endive is to gather the leaves up all round, forming them into a cone-like shape, and then tie them firmly round the top that they may retain this form. If done when quite dry wet will not readily reach the centre, and they will remain sound and good for a long time.

FRUIT FORCING.

Pines.—To maintain the sturdy healthful appearance of young growing stock free ventilation is necessary, maintaining the bottom heat about the roots at 80°, watering the plants whenever they require it. Employ weak liquid manure occasionally, and avoid using the syringe too frequently; merely sprinkling the paths every morning and evening will suffice. Fire heat must be resorted to to maintain a night temperature of 60° to 65°. Fruiting plants should have a night temperature of 70°, 80° to 90° during the day, closing at 85°. Newly potted plants must have a bottom heat of 90° to 95°, with a view to the roots speedily penetrating the fresh soil. Recently started suckers should, as soon as roots are plentifully made, be raised near the glass, it being essential that those intended to be wintered in small pots be brought on very gradually.

When the suckers started this autumn are well rooted they should be potted without delay, draining the pots well. Employ the fibry part only of turfy loam, and do not tear it up too fine, but use it in lumps proportionate to the size of the pots. The strongest plants may be transferred to the largest pots at once, the size of the pots being proportioned to the robustness of the varieties. Black Jamaicas do well in 9 or 10 inch, Queen in 10 or 11 inch pots, Smooth-leaved Cayenne and similar varieties in 11 to 12 inch pots, and Providence in 13 or 14 inch pots, which will afford fruit. Where smaller plants and fruits are the objects aimed at, pots an inch or two less in diameter will answer. The plants not of a suitable size for transferring to the largest pots may be shifted into 8 inch pots, in which they should be kept until spring.

Strawberries in Pots.—Watering Strawberries for the coming forcing season must not be neglected, though plants in well drained soil in the open ground do not suffer from continuous rains, yet those in pots are seriously injured by continued needless waterings, especially those required for early forcing, still they must never be allowed to become dust dry. Any that have the soil very wet and remain so for a time without watering should have the drainage seen to, as worms or the material upon which the pots are placed choke the outlet, rendering the soil sodden, in which no plants will thrive. The crowns are often numerous in some varieties, especially Vicomtesse Hericart de Thury, a number of small crowns clustering near the central one. The small should be removed as soon as they can be taken with finger and thumb, leaving the centre or strongest crown. This will concentrate all the vigour of the plant into the chief crown, and though there will be fewer trusses of flowers there is no need to fear a deficiency of crop, and it is essential that a forced Strawberry above all things be large and red. Give the plants sufficient room for the exposure of the foliage to light, keeping the plants free from runners, and the pots cleared of weeds.

Cherry House.—If it is intended to plant any trees it should be seen to as soon as the leaves begin falling. The Cherry—indeed, stone fruits generally, thrive best in a calcareous soil, turfy loam with a sixth of chalk or old mortar rubbish, being careful to have it free from pieces of wood, as old laths, &c., and if deficient of grit add a similar proportion of road scrapings, and to this may be added a twentieth of steamed crushed bones. If the soil be light add a sixth of clay marl finely divided, the whole to be thoroughly incorporated. Provide a drain of 3-inch tiles with proper incline of the bottom of the border to it, and the drain having due fall and sure outlet. There should also be 9 inches, or better 12 inches, of drainage, the roughest at the bottom, with the material diminishing in size upwards to that of road metal, and if the top 3 inches be of chalk or the rougher parts of old mortar rubbish it will be an advantage. A depth of 24 inches of border is ample, and 6 feet width will meet all the requirements of trees grown under glass, and the compost should be placed together firmly. Black Tartarian and May Duke are the best varieties; but the yellow forms an excellent addition to the dessert when fresh fruit is not overplentiful. Early Jaboulay, Elton, and Governor Wood are first rate. The lights having been removed they need not be replaced for a month or six weeks, the old surface soil being removed without injury to the roots and replaced with fresh compost, that above named answering with the addition of a fourth of manure.

Trees in pots required to be shifted into a larger size should be attended to at once, and those not required to be so treated should be turned out of the pots, removing a few inches of soil from the base, cutting back the roots, and supply fresh loam, adding old mortar rubbish and a sprinkling of crushed bones, good drainage being provided. Remove the surface soil, adding the above compost, with a

fourth of good manure. Afford a good watering, and place the trees where they can have plenty of air.

VINES.—*Preparing for Early Forcing.*—Where the roots have the run of outside borders it will be advisable to prepare some fermenting materials for placing on that part about the time the house is closed, the border in the meantime being protected from heavy cold rains by spare lights or other means. Two-thirds of Oak or Beech leaves to one of fresh stable litter thrown into a heap, moistened if necessary, and turned over a few times, will afford a durable heat and suitable source of nutrition. Similar material should also be prepared for placing inside the house, which will aid the Vines in starting through the uniform state of the moisture and heat, and lessen the necessity for fire heat. Thoroughly cleanse the house, everything being put into proper order, and keep the house as cool as possible. Vines that are to be started early in December should be pruned at once (if not already done), so as to allow them some weeks of rest before starting.

Earliest Vines in Pots.—These start more freely if a slight bottom heat can be afforded; a bed of fermenting materials, two parts leaves and one part stable litter, afford a mild lasting heat. Place loose brick piers so that their rims are level with the top of the fermenting bed, and the fermenting material brought up about the pots loosely in the first instance, and not to have a temperature at first of more than 70°. Vines that have been ripened early, pruned, and had about six weeks' rest, may be started at once. The temperature at starting should not exceed 55° by artificial means, but when the buds show signs of breaking it may gradually be increased to 65°. The canes should be slung in a horizontal position to induce them to push their buds evenly throughout the length of the rods, syringing them three or four times a day.

Late Houses.—Vines that were judiciously forwarded by fire heat in the spring and onward till now have crops of ripe well-coloured Grapes, which will keep much better than those that still require fire heat. Liberal ventilation on all favourable occasions will be required, and as the foliage is matured the temperature may be allowed to fall to a minimum of 50°. Mats or a light covering of clean dry straw placed on the inside border will prevent the rising of moisture. The Grapes should be looked over twice a week for the removal of decayed berries, but if properly ripened and the house drip proof they will give very little trouble. A supply of fern where the common bracken is plentiful should be cut for covering late house borders for the winter. A good covering of bracken is quite equal if not superior to litter as a protection. Late Grapes not yet ripe must have fire heat briskly by day, with a free circulation of air, and the temperature must not be allowed to fall below 65° at night, and to assist the ripening of the wood keep lateral growths closely stopped.

The present is a good time to lay in a stock of materials for forming Vine borders. The top 3 inches of a pasture where the soil is a good friable loam is suitable for Vines, and should form the staple of the compost. Place it in somewhat narrow ridges, and have the top ridged so as to throw off the wet. It is better got now than when soaked and cold from rains.

PLANT HOUSES.

Zonal Pelargoniums.—If not housed those for flowering early in November must be placed under glass at once. Water carefully at first and start them gently into growth. If they are hurried after they are housed they are liable to make a quick soft growth and fail to flower profusely. Those intended for later flowering should have the protection of glass; cold frames will suit them better than houses for a few weeks. All they need for the present is protection at night and from heavy rains. Give these abundant ventilation on fine days by throwing off the lights.

Salvias.—If not already lifted this should be done without delay; it will also be necessary to place them in a position where they can be shaded from the sun for ten days or a fortnight, and at the same time easily protected with canvas in case of frost. If they are well watered directly they are potted and then liberally syringed afterwards they will not be long before they are rooting freely, and will bear exposure to the sun.

Heliotropes.—The whole stock of these must be housed without delay, for they are not safe outside; even if they escape frost the temperature at night will fall too low for them. The earliest may be started with the Zonal Pelargoniums, and the remainder should occupy a light airy position in a cool house. For the present the temperature in cool houses will not fall low enough to do them any harm.

Tree Carnations.—The earliest plants may be housed. Select for them a cool, airy, light position, not too far from the glass. It is important that the pots be stood upon some moisture-holding base. Tie any shoots that need it before housing them, and examine the base of the pots to see that worms have not stopped the drainage and thus prevent superfluous water making its escape. A little artificial manure may be applied to the surface of the soil, and the plants gently fumigated if aphides exist upon them. The remainder of the stock, or those for spring-flowering, will be safe outside for another month.

Mignonette.—Tie down the shoots of standards and pyramids; if any of the plants are required in bloom in a month select those that are well furnished and allow the shoots to extend. Be careful that they do not become dry, or the shoots will soon become woody, and small instead of large spikes will be the result. Give abundance of air to encourage strong growth, and lightly syringe the plants twice on fine days. Give a little artificial manure to the surface of the soil at intervals of two or three weeks to keep the roots active. Be careful not to allow any of the plants to become rooted into the moisture-holding material on which they are standing. A number of those in 6 and 7-inch pots grown for cutting may be allowed to flower if seed was not sown to be covered with a frame for yielding a late supply.

Tea Roses.—Plants in pots that are bursting into new growth may be placed indoors. Give them abundance of air by day, and in a month or six weeks they will yield a capital supply of buds for cutting when those outside are nearly all over for this year.

THE BEE-KEEPER.

HOW TO BEGIN.

NOTWITHSTANDING the inclement season some friends of local and hitherto successful bee-keepers have pressed us once more to give instructions to those who desire to set up in the industry of bee-keeping; and although we are fully conscious that such information can only be given in these columns at the expense of some reiteration, it is perhaps not misusing the space at our disposal if we comply with their wishes, and once more point out to those who desire to know what is the best and most expeditious means of starting an apiary at this season of the year.

It is hardly necessary to say that those who follow our instructions in a half-hearted fashion, and only in part carry out what we deem to be the essential features in the method, should not expect to be successful. On the other hand, any man of average intelligence who will follow the instructions to the full need have no fear of failure. The end of October is certainly rather a late period to commence, but it is not too late to make a start upon the very method which we think it advisable to instruct the beginner to adopt.

The novice must first find a stock filled with well built worker comb headed by a young and fertile queen, and certainly at the very least three or four swarms of bees. The hive must admit of at least twenty standard frames being used, and on no account must a stock located in one of the little abominations containing only eight or nine frames be purchased. One who has had but little experience can hardly expect to tell the value of a queen, and if the purchaser doubts the word of the vendor the only test he can apply is to examine the combs and see whether there are patches of brood, and also to notice whether there appears to be a more than normal amount of old bees. A young bee can easily be distinguished from an old one by its grey colour and the more perfect state of the wings of the former. An excess of drone comb is very detrimental to a stock, a very small population is fatal, and a worthless queen absolutely disastrous. But if we can find a hive filled with well built worker combs, some of them containing brood in various stages, even if the population is comparatively small, there need be no fear in making the purchase, even if the combs do not contain a sufficiency of store to carry the stock over the winter and spring, because the population can easily be augmented and a sufficient supply of food afforded.

When a stock answering the above description has been met with and the purchased hive removed to its new stand, means must at once be taken to add sufficient bees and to supply the necessary food. Some 5 lbs. of bees should be obtained either by purchase or in such other manner as may offer, and then those bees may be added to the stock in the following manner. A sheet must be spread on the ground in front of the stock, and a little warm syrup prepared, taking care that the syrup is very thin. In the evening, about dusk, a few puffs of smoke must be injected at the entrance of the stock, and then the driven bees must be thrown down on the sheet and well sprinkled with syrup, when the body box of the stock hive containing both bees and combs must be lifted from its stand and placed above the bees on the sheet, the sides of the hive being propped up by bricks to prevent crushing the helpless homeless insects. In a few minutes a happy hum will resound, and early next morning the hive may be replaced upon its stand. Now is the time for feeding up the stock. This may be done in at least two ways, for either sealed

combs containing sufficient honey may take the place of the empty ones already in the stock, or syrup may be supplied in large quantities until the necessary amount of food has been stored and sealed. The large round tin feeder is one of the best possible for rapid feeding. This feeder must be placed at the top of the hive immediately over the clustering bees, and must be replenished every evening until the stock has taken from 15 to 30 lbs. of syrup. The amount will be regulated according to the estimated weight of food already in the combs, but not less than 25 lbs. of sealed store should at the end be left in every stock for winter and spring use. It is false economy to spare sugar and spoil the stock. These are the necessary instructions given in a concise form, and they are sufficiently simple to enable everyone who desires to commence bee-keeping to do so with a reasonable prospect of success.

The following points need special care :—

1, Large population.
2, Good queen.
3, Abundance of food.

We may add that bees removed from a situation less than from one and a half to two miles distant from their old location return to their accustomed place, and many of them are consequently lost. This point will need care.

The above method is only one of many plans, but it has always appeared simple, easy to carry out, and inexpensive. To add other methods might rather confuse than instruct the novice, and we therefore hesitate at present to add more than has already been written lest some gaining a little knowledge only of the principles of more advanced bee-keeping should use that imperfect knowledge to the destruction of their own interests.—FELIX.

TRADE CATALOGUES RECEIVED.

W. Paul & Son, Waltham Cross.—*Catalogue of Roses, 1888-1889.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Roses, Fruit Trees, and Nursery Stock.*

J. Cheal & Sons, Crawley, Sussex.—*Catalogue of Trees, Shrubs, Roses, and Fruit Trees.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*A. W., Leicester*).—The address you require is Mr. J. Witherspoon, Red Rose Vineries, Chester-le-Street, Durham.

Chrysanthemum Catalogue (*E. T.*). Write to Mr. W. Holmes, Frampton Park Nursery, Hackney. The price is 1s. 1d. post free.

American Papers (*T. C.*).—The *American Florist* is published at 54, La Salle Street, Chicago. You had better write to the publisher, who will give you the information required.

Hoya carnosa (*T. G.*).—Fruits are occasionally produced by this plant, and the peculiarity you remark about the seeds is a characteristic of many members of the same family, the Asclepiadaceæ.

Fruit Trees for South-east Wall (*Idem*).—Cherries and Plums are the most suitable, but it may be used for Pears, such as Jargonelle, Williams' Bon Chrêtien, Fondante d'Automne, Doyenné du Comice, Pitmaston Duchess, and Durondeau.

Celery (*R. B.*).—The Celery is infested by a fungus, and altogether appears to be in an exceedingly bad condition. Cut off the worst leaves and possibly the others may come clean, but the soil must be unsuitable in some way, and if you have a good stock it would be wise to destroy these plants.

Orchids (*T. B. M.*).—Do not withhold water so long as growth is advancing, but under cultivation the pseudo-bulbs do not always attain the same size as these plants have when imported, and the size also varies in different seasons. Try Mr. B. S. Williams' "Orchid Growers' Manual." A new edition of the work you mention is in preparation, that will probably contain much of the information you seem to desire.

An Early Blue Plum (*T. H. W., Canada.*).—Probably the variety to which you allude is Early Rivers, a small early Plum remarkable for its fertility. The flesh is tender, sweet, juicy, with a brisk flavour, and separates from the stone. It is ripe in July and early August. Write to the nurserymen who make a speciality of fruit trees respecting your other question.

Funkia grandiflora (*T. S.*).—This plant succeeds and flowers well in pots, and probably you would find those mentioned more satisfactory in this way. At a recent meeting of the Royal Horticultural Society Mr. Roupell exhibited a plant in a pot with eight fine spikes of flowers. Grown in this style it has a fine appearance. If the soil is too rich in the border it would have a tendency to develope the foliage at the expense of the flowers.

Cucumber Roots Diseased (*Telegraph*).—The roots are in a very bad condition and affected by the disease which has been repeatedly noticed in this Journal. An illustration with description was given on page 473, June 4th, 1885. The nodules are caused by minute worm-like creatures, which increase rapidly and induce the sudden failure and root decay of which you complain. Clear out the soil and manure, and thoroughly cleanse the house.

Loofah (*W. B., Essex*).—The fruit sent is that of Luffa ægyptiaca, a cucurbitaceous plant found in Egypt and other eastern countries. The portion sold in shops and used for bathing purposes is the vascular tissue of the fruit after the pulp has been removed. The species named and Luffa acutangula are known to the Arabians as Liff or Louff, and the fruit is made into a pickle like the Mango, but it has a disagreeable flavour, and is not considered very wholesome.

Wintering Tea Roses in Pots (*Thos. W.*).—They should be placed in a cool house or other place where protection can be given them in severe weather, the pots being plunged to protect the roots from frost. Could you not give them a sheltered situation outdoors, plunging the pots in ashes over the rims, and affording mats or other protection in severe weather? A cool house is, however, the best place for them, affording water only to keep the soil moderately moist.

Distance of Vines (*F. J.*).—We have had Vines 3 feet apart which answered fairly well whilst the Grapes were borne on the first shoots of the cane, but after they had borne a few years we found the distance much too little from the extension of the spurs, and not being able to encourage lateral growth, which is necessary for the continued success of the Vines. We advise you not having the Vines nearer than 4 feet, and you can take two shoots from a spur or otherwise, so as not lose anything of crop through not utilising space, but the principal foliage in any case must have full exposure to light.

Amaryllis, Gesneria, Nægelia, and Tydæa (*J. E.*).—It would be best to keep the bulbs of Amaryllis and corms of the other plants in sand a little moist to preserve them fresh until they are required for potting, keeping them in an intermediate or cool stove, and where they will be free from drip, as when placed beneath stages they are liable to become saturated and either decay or start into growth prematurely. Our correspondent asks, "Do any of your correspondents know any way of drying Tomatoes on a small scale so as to be available for winter use? Making them into sauce so entirely destroys the flavour." We should be obliged by particulars from those having a successful method.

Williams' Bon Chretien Pear Unfruitful (*A. R.*).—Either the blossom is destroyed by frost or it is imperfect. Our trees against walls have fruited freely this year, whilst those of this particular variety have not borne any fruit on pyramids worth mentioning. This we attribute to the difference in respect of immunity from frost. If the bloom does not set through damage from frost we can only suggest protection; indeed a crop can hardly be relied on without means of protecting the blossom in case of frosts occurring at the time of setting. The blossom may fail to set from imperfection, which usually arises from a deficiency of aliment in the previous season, mulching and watering not being attended to in dry weather so as to insure the maturation of the buds. More liberal treatment with protection of the blossom would probably result in a crop.

Lifting Young Vines (*W. T.*).—It is a great mistake to have Muscats planted alternately with Black Hamburghs in the same house, as justice cannot be done to either, and we do not think you will mend matters by shifting the Muscats to one end, having Black Hamburghs at the other, as it is scarcely possible to maintain the needful temperature for Muscats by less ventilation at that end of the structure. What you require is a partition so as to make the house into two, having Muscats in one and the Black Hamburghs in the other, and even then you will need to have the pipes arranged so as to heat each house separately. It is little use attempting to grow Muscats if you cannot command a higher temperature than 50° when they are in flower. Instead of lifting the Vines we should take up fresh canes from the Black Hamburghs and train them so as to supplant the Muscats, or you might graft the Muscats with varieties requiring similar treatment to the Black Hamburghs.

Pruning Neglected Vines (*Walnert*).—In order to insure a crop of Grapes next year the shoots should be pruned to various lengths and to a plump bud in all cases on well-ripened wood. If the spur shoots are cut hard back there is little prospect of a crop of fruit, and there may not be a satisfactory break. It is much better to act cautiously in cases of this kind, as the hard pruning is only calculated to induce further growth, and scarcely that from pruning hard back to two-year-old dormant buds. We should prune or cut away some of the shoots where most crowded and least promising, and so shorten the other as to provide for an even spread of growth and crop. If the Vines are desired on the spur system a fresh cane may be taken up from the base of the rafter, and as this advances the old spurs or growths on the old rod may be cut away to allow of its extension, and ultimately be removed. In that way the rods may be renewed without loss of crop.

Asphalt (*J. M.*).—The small dust should be rejected, also the larger particles, but under ordinary circumstances it is only necessary to pass the ashes through the screen, using the screened part, the rougher portions being employed for the foundation of the road or pathway. The best material is the ash from large boiler furnaces, as it is harder burned than that of house grates, and passed through a half-inch screen it is first rate. The clinkers broken if requisite will be suitable for forming the necessary bed, which should have the same form as the intended surface. Soft stone is no good, as it will not wear, but it may be used for levelling before laying the asphalt. Leave a hole in the centre of the ashes, into which pour boiling coal tar, mix well together, and when as stiff as mortar lay it down 3 inches thick on a dry and previously well levelled surface. It may be sprinkled with fine spar or granite or sand, distributing just enough to prevent the boots sticking to it, and when sufficiently firm pass a roller over it. All the materials as well as the surface on which the asphalt is placed should be perfectly dry. Cold tar will not answer, it must be boiling hot.

Sowing Ranunculus Seed (*H. J. P.*).—Sow the seed in February in boxes about 18 inches long by 11 inches wide and 4 inches deep, full of loamy soil, and the surface level. Let the seeds be about the eighth of an inch apart, cover them thinly with soil, and water with a fine rose, placing the boxes in a cold frame. The plants usually make their appearance in about a month. Afford air day and night except in the severest weather, then cover with mats. Place them outdoors about the second week in May, and water daily until the leaves wither, let the soil become quite dry, and in the middle of July lift and preserve the roots in bags until February, and then plant them as the general stock. In the following June they will flower. The roots should be planted in drills about 2 inches deep, placing a little sand at the bottom, and after planting just cover the crowns with sand. The rows should be 5 inches apart and the roots 4 inches asunder. The beds may be 4 feet wide, with 18-inch-wide alleys between. The ground requires to be in good heart and well worked. Your proposed preparation of the ground ought to answer. The commercial value may be 10s. per 1000 roots, but much depends upon the strain and other circumstances.

Spearmint and Peppermint (*M. S.*).—Spearmint, or Green-mint, is Mentha viridis, a native of Britain, in marshy places. The plant has a strong, aromatic odour, with a warm and slightly bitter taste, which is less pungent but more agreeable than that of peppermint. The properties of the plant depend on a volatile oil, obtained by distillation. Oil of Spearmint is pale yellow or greenish when fresh, but becomes darker with age, and ultimately of a mahogany colour; it is used for the same purposes as oil of Peppermint. Its specific gravity is 0·975, and its boiling point 320°. Peppermint (M. piperita) is also a native of Britain. The plant has a warm, pungent, and camphorous taste, leaving a remarkably cold sensation in the mouth. Its odour is very strong, balsamic, and penetrating, particularly when touched, and which it does not lose, even in drying. Peppermint is stimulant and aromatic, and is good against nausea and flatulence. Its properties are owing to the presence of a large quantity of volatile oil which it contains, and is obtained by distillation. Oil of Peppermint is greenish-yellow, and has a strong aromatic odour, with a warm, camphorous, and very pungent taste. Its specific gravity is 0·920, and its boiling point 365°. It is often adulterated with alcohol, and even with oil of turpentine. Combined with alcohol it forms essence of Peppermint, and it is used medicinally as a carminative and stimulant, as well as in confectionary for flavouring bonbons. Peppermint water, obtained by distillation, is very much employed in tonic, cordial, and anti-spasmodic drinks.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*No Name*)—1, Jefferson; 2, Washington; 3, Pond's Seedling. Pear unknown. (*E. Wallis*).—White Magnum Bonum. (*M. A.*).—Pear not known. It ought to be gathered before it is ripe and allowed to mature in the fruit room. (*G. L. Court*).—Beurré d'Amanlis.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes, Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. C. & Sons*).—The specimen being loosely packed was damaged and dried when it reached us, but it is probably Matricaria inodora plena, a hardy plant of easy culture. (*W. C., Havant*).—The succulent plant is Stapelia variegata. The Cypripedium is a good variety of C. insigne. (*G. R.*).—3, Gymnogramma chrysophylla; 5, Selaginella Martensi variegata. The other specimens are insufficient for naming, and a sample of the wood and foliage should have been sent with the Plum. (*T. S.*).—We will endeavour to give you the name required next week. (*R. B. S.*).—1, Xylophylla falcata; 2, Veronica Andersoni; 3, Osmunda gracilis; 4, Doodia aspera. (*R. W.*).—Lobelia syphilitica.

COVENT GARDEN MARKET.—October 3rd.

OUR market is now overstocked with Peaches, with difficulty clearing at low prices. Cobs down in price.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	0	0		0	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	70	0		75	0	Peaches, dozen	2	0		6	0
Currants (Red), ½ sieve	0	0		0	0	Pears, dozen	0	9		1	6
,, (Black), ½ sieve	0	0		0	0	Plums, ½-sieve	2	0		4	0
Grapes, per lb.	0	6		2	6	St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	2		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, dez. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	7
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	3	0		6	0	Mignonette, 12 bunches	1	0		3	0
Asters, dozen bunches	2	0		4	0	Pansies, 12 bchs	0	0		0	0
,, French, per bunch	1	0		1	6	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	1	0		2	0	,, scarlet, 12 trusses	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pyrethrum, doz. bunches	2	0		4	0
Calceolaria, 12 bunches	0	0		0	0	Roses, Red, 12 blooms	0	6		1	0
Camellias, 12 blooms	3	0		4	0	,, (outdoor), 12 bchs	3	0		6	0
Carnations, 12 blooms	1	0		2	0	,, (indoor), dozen	0	6		1	0
,, 12 bunches	4	0		6	0	,, Tea, dozen	1	0		2	0
Chrysanthemums, 12 bl.	1	0		4	0	,, yellow	2	0		4	0
,, 12 bchs.	2	0		6	0	Stephanotis, 12 sprays	2	0		4	0
Cornflower, 12 bunches	1	0		3	0	Stocks, 12 bunches	4	0		6	0
Dahlias, 12 bunches	2	0		4	0	Sweet Peas, dozen	2	0		4	0
Daisies, 12 bnoches	2	0		4	0	Sweet Sultan, 12 bunches	2	0		4	0
Eucharis, dozen	2	0		4	0	Tropæolum, 12 bunches	1	0		2	0
Gardenias, 12 blooms	1	6		4	0	Tuberoses, 12 blooms	0	4		0	9
Lapageria, 12 blooms	1	0		2	6	Gladiolus, 12 sprays	0	6		1	6
Lavender, 12 bunches	3	0		4	0	Violets, 12 bunches	1	0		1	6
Lilium longiflorum, 12 blooms	3	0		6	0	,, Parme (French), per bunch	3	0		4	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Foliage Plants, var., each	2	0	to	10	0
Arbor vitæ (golden) dozen	12	0		24	0	Fuchsia, dozen pots	3	0		6	0
Asters, 12 pots	3	0		6	0	Genista, per dozen	6	0		0	0
Balsams, per dozen	0	0		0	0	Heliotrope, dozen pots	3	0		6	0
Begonia, various, per doz.	4	0		9	0	Ivy Geranium	0	0		0	0
Chrysanthemum, doz.	4	0		9	0	Hydrangea, dozen	6	0		12	0
,, large, doz.	15	0		24	0	Lilium, various, doz. pots	12	0		21	0
Coleus, dozen	2	0		4	0	Marguerite Daisy, dozen	6	0		12	0
Crassula, dozen	0	0		0	0	Mignonette, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Musk, dozen pots	0	0		0	0
,, viridis, dozen	12	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nastartiums, per dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	0	0		0	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0



WHEAT SOWING.

After a season remarkable for fluctuations of weather, and consequently with more than the ordinary difficulties which beset the farmers' calling, we have come to the end of the agricultural year and are face to face with the beginning of another. No cessation of work, no rest, in the common reception of the term, must there be, for so late was the harvest that the carting of the last load of corn had to be followed at once by a prompt preparation of the land for sowing green crops and winter corn, among which Wheat still holds the leading place.

Pressure of business prevented us seeing the finish of harvest on one of our off-hand farms. When we went there a few days subsequently the first sight we beheld was a Barley stack near the road with a couple of green Oak branches thrust into the top, to proclaim to all and sundry that the harvest was ended and that it was the last stack built on that farm. Turning from that not unwelcome sight we found ploughs and manure carts in full swing in preparation for autumn cropping. "Well done!" said we to the bailiff, "make the most of the fine weather for carting, ploughing, and sowing, and leave all corn-threshing alone till the winter corn is in." The ploughs were at work upon an old Clover layer upon which sheep had been folded, so that it was thoroughly manured in readiness for Wheat. Other land which had been a bastard fallow, and then sown with White Mustard, had already had that valuable green crop ploughed in and was quite ready for sowing. Two fields from which winter Beans had just been cleared were being dressed with pig manure to be ploughed in for Wheat, and this comprised all the Wheat land for next season on that farm. But there are some ninety acres adjoining this farm falling in hand from a tenant this Michaelmas, upon which there is a full proportion of bare fallow under the old four-course shift, and this fallow land will be sown with Wheat immediately after Michaelmas. We know full well how low in fertility the tenants' fallows are, and shall have to resort to an autumn and spring dressing of chemical manure for the Wheat in order to insure a profitable crop. The formula is in autumn half cwt. nitrate of soda, quarter cwt. steamed bone flour, quarter cwt. mineral superphosphate. In spring half cwt. muriate of potash, 1½ cwt. nitrate of soda, 1¼ cwt. steamed bone flour, half cwt. mineral superphosphate. The manures are procured separately from a reliable source and mixed at the farm under close supervision.

All due care being taken to keep the land clean, free from superfluous water, and well stored with fertility, the next point of equal importance is to select and sow good seed. Glad indeed are we to say we have no difficulty now about the seed, for we have got rid of all inferior sorts from the whole of our farms, and the only question is which sort is best for all seasons. The sorts to which we give preference now are Defiance and Squarehead. Of these Defiance has much the finest grain this year, but Squarehead has so many high qualities that we feel bound to use some, and we shall sow about 200 acres of it. Of Defiance the published character is as follows:—"This very popular red Wheat is distinct from and far superior to any other variety on account of its productiveness and grand quality. The ear is of large size and remarkably thick set, while the grain is wonderfully plump and eagerly sought after by millers. It has also the great advantage of being very free from rust, and succeeds well where other red Wheats fail." There! is not that a good character? We certainly are able to say after growing it for two years that it answers well to most of the description. But what are we to say to the more recent introduction termed Salvator by one firm and Mountain White Wheat by another? It is a white bearded Wheat, which, like the Beardless Barley, loses its beard as the corn ripens, and is said to yield 88 bushels an acre, and the straw grows 7 feet high. We have seen a sample of this wonderful introduction, and it was so superior to ordinary Wheat that we have ordered some of it for trial, and if it proves at all equal to the description it will be used on our heavy land farms. All is not gold that glitters, but we always give a fair trial to any novelty of promise, for we hold that it answers to grow the best sorts and only the best.

WORK ON THE HOME FARM.

Harvest work is now practically over, the only crop out as we write being some spring Beans, which are still green, but the pods are full and the crop one of remarkable abundance, with such strong growth that the sheaves have the appearance of huge faggots. Late sown Peas proved a troublesome crop, ripening very slowly owing to the abnormal growth induced by a wet season, All have now been carted in fair order. As the last were still somewhat immature we had them put into long narrow stacks through which the air can circulate and dry the Peas thoroughly. The latest fields of Barley had the corn in best order when carted, for the recent spell of fine bright weather has indeed proved a blessing to farmers generally. Much caution will be necessary in threshing corn this season, as so much has been carted without being quite dry and hard.

Of work pressing for immediate attention ploughing land for green crop and winter corn is the most important. Those fortunate farmers having steam tackle may be able to get some land clean for spring crops also, but that is just a question of fine weather. First of all we will sow Rye and Winter Tares, then come winter Beans, Oats, and Wheat. On heavy land especially we cannot push on Wheat-sowing too fast for we like a full strong plant before severe winter weather sets in. Our best crops of Wheat this year on heavy land was from seed sown in September, but Wheat-sowing in September this year was impossible, and so we must just do our best in October. We have still got the mowing of second crop Clover and Sainfoin to do, but we cannot hope to save any good Clover seed now, and must try and turn it to account for forage. Much Clover has been folded by sheep, but there has been such a superabundance of green food that it was impossible to use the whole of it in that way. Sheep now find a brisk sale at high prices, and the full crop of roots certainly justifies the proceeding, but let farmers look well to a due provision of green crops for spring use also.

Agricultural Lectures.—The annual course of lectures on agriculture will be given at the City of London College, Moorfields, on Tuesday evenings, at 7 P.M., beginning on October 2nd, by Mr. Bernard Dyer, B.Sc., F.C.S., F.L.S., Consulting Chemist to the Essex, Leicester, and Devon Agricultural Societies. The lectures will treat of soils, plant life, manures, tillage operations, live stock, dairying, food, &c. The course will be in connection with the Government Science and Art Department, and will end in May. In addition to the College and other prizes, the Sadlers' Guild offer, as in former years, a prize of £5 5s. to the student who passes the best examination in chemistry and agriculture.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. September.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 23	30.193	54.5	54.1	N.E.	57.0	61.2	50.2	72.4	41.5	0.010
Monday..... 24	29.970	59.3	57.6	N.	56.3	68.4	51.6	91.7	45.9	0.135
Tuesday 25	30.006	55.7	55.7	N.E.	57.0	56.9	54.1	69.1	54.1	0.368
Wednesday.. 26	30.259	54.6	51.9	N.E.	55.7	62.3	48.4	91.7	43.5	—
Thursday 27	30.237	56.4	51.8	N.E.	55.3	64.3	44.5	96.8	39.6	—
Friday 28	30.095	55.3	52.9	N.E.	54.0	62.8	48.8	65.8	44.0	0.071
Saturday 29	29.803	58.6	57.2	N.E.	55.2	68.1	55.1	100.8	54.6	0.239
	30.079	54.3	54.5		55.8	63.4	50.7	84.0	46.6	0.923

REMARKS.

23rd.—Misty morning, cloudy day, bright evening and night.

24th.—Slight showers early and about midday, otherwise fine and bright.

25th.—Wet morning, dull afternoon and evening.

26th.—Fine and bright.

27th.—Cloudless morning, fine afternoon, with solar halo 4.30 to 5 P.M.

28th.—Misty morning, dull drizzly day, with showers in the afternoon.

29th.—Dull morning, fine day; sudden heavy rain at 9.5 P.M., lasting till after midnight.

A variable week, but with much more fine and bright weather than would be inferred from the number of wet days and total rainfall. Temperature about 3° above the average.—G. J. Symons.

FRUIT CONFERENCES.

WHATEVER divergence of opinion may have existed on the action of the Royal Horticultural Society in the conduct of its affairs, there can be nothing but unanimity in respect to the decision arrived at in having periodical conferences at Chiswick on subjects of importance to the general community. The greatest success ever achieved by the Society was in holding the Apple Congress in the renowned Gardens a few years ago, the measure of that success being determined by the demand for the "Report" that was subsequently published. The Pear Congress was interesting and instructive, but essentially less useful, but only because of the intrinsic difference between the two kinds of fruits, one being largely a luxury for the palate, the other an important article of food.

The coming Conference will be in the nature of a combination—a combination of excellencies it ought to be, seeing that the collections of fruits staged will be selections, and thus representing the best varieties in cultivation in the best manner the season allows. From the nature of the conditions the exhibition cannot be expected to approach in magnitude its two predecessors, but it should excel them greatly in average of merit. Than some of the specimens that were staged when all varieties were invited, we cannot expect to see finer next week, and possibly, having regard to the inclement summer, the best may not equal the premier dishes of former years; but an enormous quantity of inferior fruit was of necessity sent to those gatherings (and rightly sent considering their nature) that ought to be absent from the collections of the present year.

The concentration of effort on the subject of fruit production and disposal cannot fail to be of great value, not to a section but to the general community. The isolated action of individuals no longer suffices in these competition-of-the-world days to keep us abreast of the times, and competent to meet the best products of other lands, raised and placed in our markets under a system of combination of resources. The old time-worn habit of personal and trade jealousies must no longer stand in the way of general advancement, but all must combine in contributing to a common fund of knowledge for a common object—developing the resources of the soil, and placing before consumers better supplies of life necessities than they can obtain elsewhere. That this can be done in the case of many of our hardy fruits is certain, and we have no doubt will be done eventually, but the object cannot be accomplished in a season.

The great desideratum is to ascertain right lines of procedure, which, if followed perseveringly and systematically, can only have one result, and that a good one. A community of effort, though seemingly antagonistic to personal endeavour, is not really so. There will be the same scope for wholesome individual rivalry as before, and this will be stimulated rather than suppressed by the consciousness that each knows the other's opportunities for acquiring information on matters in which all are interested. It is the aptitude of turning knowledge to account in which differences will and must be found; but the striving for excellence will be all the same stimulated, and the aggregate advantages accruing from informal, yet effective, co-operation cannot fail to be both seen and felt as time rolls on. Harmony of action amongst individuals working in the same cause for the same end, combined with personal rivalry are the lines on which to work if we would attain to a position of supremacy as producers of life necessities for a teeming and ever-increasing population.

To accomplish this we even welcome rivalry, friendly and pleasant, in conferences, and this we have. The Crystal Palace meetings have done much good, and those at Chiswick must do much more, and the results of both will leave us the richer, while neither of the agencies can be weakened by the efforts made in work that is in every way so commendable.

The days of shows—bare shows—something to see and little more—have ceased to be satisfying, and it was a happy idea to associate with them meetings for the reading of essays and discussions thereon, and the earnestness, not to say the enthusiasm, displayed at the first of these gatherings at Sydenham showed conclusively what is wanted by the horticultural community; and having regard to the subjects to be advanced at Chiswick next week and the character of the authors an equal success may be hoped for in the gardens of the Royal Horticultural Society.

PREPARING FOR WINTER.

CULTIVATORS of gardens cannot have much to say in favour of 1888. As a rule it has been unfavourable for all. The spring was very late and backward, and there was no real summer. The autumn since about the beginning of September has been better and vegetation has been matured considerably, but a severe winter would soon show that much of it was far from being in sound condition, and it will require careful preparation to guard against blanks and failures. Holly and other berries are very plentiful. Some say these indicate a severe winter, but I do not place any reliance in the assertion, as I have frequently noticed the indication is not verified: but on the morning of October 2nd we had sufficient frost to blacken the leaves of Dahlias, Vegetable Marrows, and Kidney Beans, and I cannot disregard what this denotes. I can see plainly it will be prudent to prepare for winter in good time, and October is the month when this ought to be done.

Being a kitchen gardener, and knowing how important it is to have a good supply of vegetables during the winter, I give these attention first. Many have mistaken ideas about weeds in the kitchen garden. They are of opinion if the crops are well surrounded with them in autumn and winter that they will prevent the frost doing harm, but they are the worst of all shelters; indeed, they are injurious, as they make the plants very tender. The best way of guarding against the frost and wet doing harm is to expose the plants fully in autumn; then they are hardened and matured, and it is astonishing how much they will stand after that.

Dead leaves are no advantage about the plants. They retain the moisture around the stems, and wet plants always suffer more from frost than when they are caught quite dry. I therefore recommend that the dead leaves be removed from everything. Some may say, Broccoli and Brussels Sprouts, Curly Greens, and Savoys are hardy enough, and in their case it does not matter, but it is as important that the dead leaves be cleared from these as from anything else.

Lettuces and Endive should be lifted and stored in frames. If the plants are small give them some good soil to grow in; if large, and not likely to grow much more, plant them in sand or fine ashes, as they will not suffer from damp so much in these as in soil. Store Onions in a dry room or shed. Take up Beetroot, cut the leaves off about 4 inches from the crown, and store under cover amongst sand or ashes. The material should not be too damp, as it may generate decay, and if too dry it is apt to make the roots shrivel. Carrots may be stored in the same way, but it is only those that are fully grown, or the main crop, that should be stored. Late-sown ones that have not gained full size must not be taken up,

but left to be drawn as required. Store a quantity of bracken, straw, or some kind of covering material, to have it ready for covering Celery and other crops as soon as frost comes, but do not on any account begin protecting until then. We have frequently saved the crowns of Parsnips and Salsafy by spreading a quantity of leaves over the ground in which they were growing, and this also protected them from frost, so that there was no difficulty in digging up the roots as the ground was not hard.

We are now housing our Chrysanthemums. The last of them will probably be in before these notes are in print. As extra attention has been given them this year, the buds are large and promising, and we were afraid they might be injured by frost. This must be avoided, and the best place for all plants of value now is in the greenhouse, a Peach house, or vinery from which the fruit has been gathered. Do not shut them up. Let them have air day and night so long as there is no severe frost. They will then be in good order to stand the winter so far as they last into it. Begonias, Primulas, Cinerarias, and all tender greenhouse plants that have been in frames during the autumn should now be moved into a house. This applies more particularly to plants in cold frames. Where the frames are heated the plants may remain. Be sure that all the dead leaves and superfluous growths are removed, and it is equally important that the pots be washed. It is remarkable how easily a plant in a clean pot is kept in health as compared with one covered with green slime and dirt. I attach the utmost importance to having clean pots in winter; indeed it is one of the secrets of successful wintering of plants. In applying fire heat to plants in winter, a mistake is often made when it is said "the nights are getting very cold; I fear our plants will suffer," and heat is forthwith applied. This may suit tropical plants, not greenhouse and bedding plants, and it does more harm than good, as it makes them very tender before the winter has really set in. If we have a long period of wet we light the fires sometimes to expel the damp, but apart from this we avoid firing as much as possible until it is needed to keep frost out. After the new year this is not so important, as if plants do begin to grow then they can generally keep it up, but when prematurely excited in November the tender growths are almost sure to dwindle and die before March.

A great distinction should be made between plants that are only stored for the winter and those that are grown to be useful at that season. The want of sufficient light is the cause of many plants becoming unhealthy or dying altogether in winter, and all of any value should be so arranged that they may receive it, and any sunshine that may appear as well. Careful ventilation is another operation which adds much to their health and safety. If the houses or pits are at all air-tight keep them closed up on wet days, and open the ventilators when the atmosphere is inclined to be dry outside. As a rule front ventilators should not be much used in winter, but as the damp air ascends let it escape at the top. After a few days or weeks of wet the pipes or flues should be heated when air is given.

We are now coming to the time which is admitted to be the worst of all for keeping Grapes. If they can be safely taken through the latter part of October and November they will not be very troublesome afterwards, and to accomplish this keep the surface of the inside borders rather dry, remove every leaf as soon as it decays, clip decaying berries out as fast as they appear, and work the fires and ventilators so as to keep the atmosphere always very dry. If these details are carried out, and they are simple enough, I will guarantee the Grapes to winter well. Too much water at the root is a dangerous condition to plant life in winter. To those in a strong heat it may not be very injurious, but all plants in cool houses will suffer severely. We have some large plants of various kinds in a house where we cannot apply fire heat in winter, and it is astonishing how healthy these remain by a close observance of the rule of keeping the soil at the roots somewhat dry from October until March. We all know how much vegetation in the open suffers in winter in badly drained land, and this applies so forcibly to plants in pots that the drainage of every one ought to be in good order before winter.—A Kitchen Gardener.

A LIBEL ON NURSERYMEN.

A great deal of rhodomontade on fruit-growing appears from time to time in the daily papers that is not worth notice in these columns, but a paragraph, as stupid as it is scurrilous, was published last week that cannot be passed in silence. It is signed by the "Secretary" of a so-called "National Fruit Growers' League," and is as follows:—"Why is it that tons and tons of fruit are left to rot in the orchards where they fall from the trees? Simply because they consist of useless and unsaleable kinds. The nurseryman's stock in ninety-nine cases out of a hundred consists of these worthless trees. In this country at the present time there are millions of these useless trees in existence—what is to become of them? They are only fit to be burnt. In this sense it is a pity that at our conferences nine out of every ten committeemen are nurserymen having a pecuniary interest in the disposal of these worthless trees."

From the first two sentences we do not dissent, but the allegation that "the nurseryman's stock in ninety-nine cases out of a hundred consists of these worthless trees" is a gross and palpable untruth. The trees in nurseries are as unlike the decrepit and useless standards in old and neglected orchards as it is possible for trees to be; and to imply that nurserymen procure grafts from such worthless trees and varieties for propagating and distributing among their customers, betrays an amount of ignorance on the part of the writer of the paragraph in question that we did not suppose existed in these days, while it attributes to the men assailed positive foolishness, amounting even to trade suicide. Does not the assailant know that worthless varieties of trees would, if raised, occupy as much of the precious space in nurseries as the most superior, while the latter have a ready sale, doing credit to the vendors, and bringing more business through giving satisfaction to purchasers? Nurserymen have to keep many varieties of fruits in stock for garden culture, and the completion of collections that many persons derive pleasure in forming; but these are a very small minority, the great majority, amounting to ninety-nine out of a hundred, consisting of the very best and most profitable varieties in cultivation, these being in the greatest demand, and their raisers have the greatest pleasure in supplying them.

No one understanding what he sees can visit the establishments of the leading raisers of fruit trees without recognising the cleanness and general excellence of the stock, and it is easy to ascertain that the most useful varieties are produced in the greatest numbers; and no persons know better than those growers, and few as well, the best varieties to choose for different purposes and positions. It is a pity a respectable newspaper should be deluded into publishing such trash as is contained in the above paragraph, the closing sentences of which are positively insulting to as honourable a body of men as can be found in any other craft or calling. It is not for this "Secretary," whoever he may be, to malign men whose position and antecedents are at least as good and unsullied as his own; and to suggest they have got themselves appointed on committees to enable them to sell "worthless" trees is indeed pitiable, while to assert that "nine out of ten" of conference committeemen "are nurserymen" is entirely and absolutely false. There are only a sufficient number to render the committees fairly representative, and there are no more useful members than those alluded to. If the Secretary of the "League" continue to indulge in such reckless assertions and unworthy insinuations as those cited he can scarcely fail to speedily bring it into disrepute.

TRITOMAS.

The Tritomas are unrivalled among hardy perennials during the autumn months. They are the most valued when the cold nights and nipping frosts have blackened and disfigured the Dahlias; and when the usual bedding plants have once more completed their task then it is that these "Red-hot Pokers," "Flame Flowers," or "Torch Plants," as they are often called, are seen to greater advantage than ever. There is nothing fastidious about these plants beyond some requiring slight protection in winter, and this may readily be given in the shape of a mulching of dry litter or bracken; and should they occupy positions much exposed then I would further advocate making them protect themselves by tying their leaves up in the shape of a sugar-loaf or cone late in autumn after flowering is complete. This may easily be accomplished by gathering the leaves rather closely together, and should they be at all massive a little dry straw may be placed between the foliage to prevent decaying, tying the whole up in a pyramid with three or

more stakes, as occasion may require, then with a handful of straw form a cup on the top, and all is complete. This may seem considerable trouble for a plant which is called hardy, and which is hardy beyond doubt so far as actual frost is concerned, but which at the same time cannot endure alternately frost, thaw, rain, and snow in a period of twenty-four hours. The Tritomas suffer most perhaps in common with Yuccas, Pampas Grass, and a few others from snow settling in their hearts, and from which they seldom recover. The Yuccas are broken down and thus permanently disfigured, but which can be avoided by adopting the plan I have alluded to; for all will readily admit that it is easier to thus protect fine specimens which do exist rather than let them take their chance of being either killed outright or, it may be, rendered unsightly objects for the greater part of the ensuing year. Nothing is more discouraging or disappointing as the spring time dawns than to discover one by one how this or that plant has suffered during the winter just past.

The positions most suited to these plants are the large border, the shrubbery in good open positions, not crammed between huge and ungainly specimens. For conspicuous places on the large rockery, or in bold masses or groups on the lawn, they are grand and effective, and are always admired. An excellent effect may be produced by forming an irregular clump on the lawn, say of twenty or thirty plants, raised a couple or 3 feet in the centre, and sloping to the sides. Dotting plants here and there may be very well in many cases, but nothing can pourtray the importance of this handsome genus of plants like planting in bold picturesque masses. With exactly the same results might this be extended even in our London parks and gardens, that the public may the more fully appreciate one of our best town plants.

But now a word as to planting time. After some experience with these plants, I consider that March and April are the best months for planting Tritomas. They may, however, be planted in autumn very successfully on warm, well-drained soils, but not always so on cold or clayey soils. If from various causes they must be planted in autumn, it is most important that the foliage should be left entire, and not cropped off to within a foot of the ground. In wet seasons, or when snowstorms are abundant, this cropping off the leaves, which is done sometimes for mistaken tidiness, often ends fatally, and should therefore be avoided.

The Tritomas have of late years increased in importance by the addition of new varieties, some of which assist in extending an already lengthened period of bloom, and at the present time by selecting the best of new and old varieties their richly coloured spikes may be had almost without interruption from early in August till the end of November. The best known and most widely distributed are the varieties of T. Uvaria itself, valuable and free-flowering. This is usually 3½ feet high, producing spikes of orange and scarlet flowers, which begin to expand in August and continue to October. The other forms of this species are grandiflora, a bold habited plant with crimson and orange-coloured spikes; grandis has a good deal of the last named about it. In general aspect and colour the two are not requisite in one collection, though both are excellent individually. Glaucescens, very distinct foliage and flower, the latter being of a bright orange scarlet and very effective, toning to deep orange with age. The last of this group is nobilis, a well named form, fully 7 feet high, producing a succession of reddish orange spikes from September to November, and in open seasons even later. Of other good and distinct forms T. Macowani is deserving special mention. It is much dwarfer than those already named, and rarely exceeds 18 inches high. It is not so robust as the majority, and is remarkable for its charming light golden orange red tinted spikes of flowers. This is just now (October 3rd) passing out of flower, and is well suited for the rockery or the border. A distinct species is T. Leichtlini, a September flowerer, which bears grand spikes of yellow flowers. This is most handsome and should be grown by all. Mutabilis is among the earliest of all, and has completed flowering nearly a fortnight; its spikes of saffron yellow changing to orange and slightly tinted with red are very pleasing. It grows from 3 feet to 4 feet high and is a very handsome plant. The last I shall now name is Caulescens This is sometimes described in hardy plant lists as an arborescent species, which is misleading in the extreme. It may be more faithfully described as a gigantic form of nobilis with broad handsome glaucous recurving leaves, from which issue brilliantly coloured spikes of crimson and yellow to a height of 6 feet. I have never seen this species in a more happy condition than it is in the Birmingham Botanical Gardens. Being somewhat tender Mr. Latham, the able curator, has thoughtfully placed it at the foot of the wall of the new conservatories, where it enjoys full exposure to the sun in a border duly prepared for them. It is not suited to a heavy soil or damp low-lying position, but the reverse.

All the species and forms are readily increased by division and also by seeds, which in most kinds germinate with remarkable freedom. I have this season potted several thousand plants from seed sown about eight months ago. These are now ready for planting in the open ground. I mention these facts to illustrate how readily a stock may be obtained for purposes of naturalisation either in the woodland or the arboretum.—J. H. E.

POTTING SHEDS.

When visiting the gardens of L. Gueret, Esq., of Castleford, Chepstow, recently we greatly admired the potting house; for a house it is, not a shed such as is usually found in gardens. A new range of glass houses were erected in these gardens some three years since, which do great credit to the builders, Messrs. Boulton & Paul of Norwich, the house referred to being almost a continuation of the stove, forcing house, &c, and differs from these only in proportion to the purpose for which it is required, being efficiently heated and well fitted with every convenience necessary, such as cupboards, writing desk, &c. Nor is this all, as was pointed out by Mr. W. Iggulden in this Journal some years ago. These potting houses can be used in various ways—as an orchard or Tomato house, or, as in the case in question, a vinery, for we noticed a Vine of Foster's Seedling making its way up the roof of the house and bearing a few creditable bunches of fruit. Mr. Geuret evidently saw all this and probably much more when having these houses erected, for when there is a house of this kind close to the plant houses it must be clear to all that not only can much more work be done in a given time, but it can also be much better done, to say nothing of the additional comfort to those employed. How often do we find in gardens elaborately built glass structures with perhaps every accommodation for growing the plants, while the potting shed, mostly very badly lighted, is some distance away.

Owners of gardens are not always to blame for this sort of thing. We know of instances where it has been entirely the fault of the gardener; and, again, we could tell of cases where by a small outlay the want has been adequately supplied, and in return a profitable crop taken from the roof. We have often been obliged in early spring to do much of the potting in houses where the plants were growing. This may still be advisable in certain cases even where such a house as described above exists, but it is often a very great nuisance, especially on bright days, for it is not easy to keep the atmosphere in a condition to suit both plants and men, besides which the door has often to be incessantly opened and shut, which I need not say, when it opens into the cold air, is very objectionable. In cases (and there may be some) where the potting house or shed is of necessity disconnected with the plant houses, the glass potting house is of double advantage, as plants which have been repotted may be allowed to remain where they are for a few days until there is a favourable opportunity for removing them, I mean when the external air is exceptionally cold.—W. Jenkins.

ROSES AT THE NATIONAL ROSE SOCIETY'S METROPOLITAN EXHIBITIONS.

Having now before me the necessary data for the last three National Shows, I am able in the present analysis to give the average results for the whole three years, instead of, as before, the positions taken by the different varieties at each show separately. A three-years average is of course a very short one, but it is the best as yet at my disposal. Had any one of the last three Rose seasons been an early one the tables here given would have been in every way more satisfactory than they now are; but unfortunately each of these three summers has been unusually backward, so that the earlier flowering kinds become unduly favoured, whereas those coming into bloom late occupy lower positions than they are entitled to. That these adverse influences have not, however, seriously affected the places accorded to the leading varieties is, I think, shown by the fact that when the results obtained at the Society's two Exhibitions this year—one held on the 7th and the other on the 20th of July—were compared, there was found to be but little difference between them. In fact, out of the twenty-four Hybrid Perpetuals most frequently shown at the Crystal Palace and Darlington respectively, only E. Y. Teas, Prince C. de Rohan, Xavier Olibo, Camille Bernardin, and Heinrich Schultheis are absent from both lists. With the exception of those Roses sent out since 1882, the positions of the varieties included in the accompanying tables, are dependent upon the average number of times they were shown in the prize stands at the last three metropolitan Exhibitions of the National Rose Society. The 1883 Roses are placed according to their averages for the last two Shows only, while for the still newer kinds the number of times they were staged at this year's Exhibition is alone taken into

account. The total number of Roses tabulated for the purposes of this analysis is altogether 5420—viz.,

	Hybrid Perpetuals.	Tea and Noisettes.
1886	1038	509
1887	1130	642
1888	1247	854
	3415	2005

The past summer was the most backward of the three seasons. Moreover, instead of the weather being hot and dry previous to the metropolitan exhibitions being held, as was the case in 1886 and 1887, the end of June and early part of July this year proved exceptionally wet and chilly; consequently, although when the annual lists are examined separately most of the prineipal varieties come out in nearly the same positions eaeh year, yet, as might be expected, there are a certain number of important exceptions. By comparing the average positions of the different Roses at the two previous exhibi-

HYBRID PERPETUALS.

Position in Present Analysis.	Average Number of Times Shown in the Three Years.	Number of Times Shown in 1888.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	40·3	36	Madame Gabriel Luizet	1877	Liabaud	Light silvery pink.
2	31·7	35	Marie Baumann	1863	Baumann	Soft carmine red.
3	31·0	36	A. K. Williams	1877	Schwartz	Bright carmine red.
4	30·7	35	La France	1867	J. B. Guillot fils.	Silvery rose.
5	27·7	29	François Michelon	1871	Levet	Deep rose.
6	26·7	34	Ulrich Brunner	1881	Levet	Cherry red.
7	24·7	27	Lady Mary Fitzwilliam	1882	Bennett	Rosy flesh.
7	24·7	26	Merveille de Lyon	1882	Pernet	White.
8	23·3	9	Marie Rady	1865	Fontaine	Bright carmine red.
9	21·7	28	Charles Lefebvre	1861	Lacharme	Purplish crimson.
10	21·0	29	Etienne Levet	1871	Levet	Carmine rose.
11	20·7	23	Captain Christy	1873	Lacharme	Delicate flesh.
12	19·7	33	Duke of Edinburgh	1868	Paul & Son	Scarlet crimson.
13	19·3	29	Louis Van Houtte	1869	Lacharme	Deep crimson maroon.
14	18·3	22	Baroness Rothschild	1867	Pernet	Light pink.
15	18·0	21	Alfred Colomb	1865	Lacharme	Bright carmine red.
15	18·0	17	Xavier Olibo	1864	Lacharme	Dark velvety crimson.
16	17·3	11	Marquise de Castellane	1869	Pernet	Clear cherry rose.
17	16·3	19	Prince Arthur	1875	Cant	Deep crimson.
18	15·7	19	Horace Vernet	1866	J. B. Guillot fils.	Purplish crimson, shaded.
18	15·7	4	Monsieur Noman	1866	Guillot père	Pale rosy pink.
19	15·3	17	Camille Bernardin	1865	Gautreau	Light crimson.
20	15·0	4	Duchesse de Vallombrosa	1875	Schwartz	Pale rosy pink.
20	15·0	12	Le Havre	1871	Eude	Vermilion red.
21	14·7	22	Marie Verdier	1877	E. Verdier	Pure rose.
22	14·3	0	Marie Cointet	1872	Guillot	Light pink.
23	13·0	8	Abel Carrière	1875	E. Verdier	Crimson maroon.
24	12·7	5	Beauty of Waltham	1862	W. Paul & Son	Rosy crimson.
24	12·7	17	Duke of Wellington	1864	Granger	Vivid crimson, shaded.
25	12·3	17	Comtesse d'Oxford	1869	Guillot père	Carmine violet.
25	12·3	21	Dr. Andry	1864	E. Verdier	Bright crimson.
26	12·0	21	E. Y. Teas	1874	E. Verdier	Bright carmine red.
26	12·0	23	Général Jacqueminot	1853	Rousselet	Bright scarlet crimson.
26	12·0	12	Her Majesty	1885	Bennett	Light pink.
27	11·7	22	Sénateur Vaisse	1859	Guillot pére	Bright crimson.
27	11·7	8	Violette Bouyer	1881	Lacharme	Tinted white.
28	11·3	15	Heinrich Schultheis	1882	Bennett	Delicate pink rose.
29	11·0	25	Dupuy Jamain	1868	Jamain	Bright cerise.
30	10·3	12	Countess of Rosebery	1879	Postans	Carmine rose.
30	10·3	15	Duke of Teck	1880	Paul & Son.	Crimson scarlet.
30	10·3	8	Fisher Holmes	1865	E. Verdier	Shaded crimson scarlet.
30	10·3	7	Marguerite de St. Amand	1864	Sansal	Clear rosy flesh.
31	10·0	22	Ferdinand de Lesseps	1869	E. Verdier	Shaded crimson.
32	9·3	6	Star of Waltham	1875	W. Paul & Son	Carmine violet.
33	9·0	12	Duchess of Bedford	1879	Postans	Light scarlet crimson.
33	9·0	21	Marie Finger	1873	Raimbaud	Light salmon rose.
33	9·0	18	Madame Victor Verdier	1863	E. Verdier	Clear light crimson.
33	9·0	19	Prince Camille de Rohan	1861	E. Verdier	Crimson maroon.
34	8·3	5	Reynolds Hole	1873	Paul & Son	Deep scarlet maroon.
35	8·0	8	Victor Hugo	1884	Schwartz	Bright crimson, shaded.
36	7·3	15	Comte Raimbaud	1867	Rolland	Clear crimson.
36	7·3	7	Comtesse de Serenye	1874	Lacharme	Very pale rose, shaded.
36	7·3	7	Madame Eugène Verdier	1878	E. Verdier	Light silvery rose.
36	7·3	1	Madame Lacharme	1872	Lacharme	Nearly white.
37	7·0	1	Annie Laxton	1872	Laxton	Clear rose.
37	7·0	8	Charles Darwin	1879	Laxton	Brownish crimson.
37	7·0	14	Duchesse de Morny	1863	E. Verdier	Silvery rose.
37	7·0	4	Madame H. Jamain	1871	Jamain	Pale flesh.
38	6·3	7	Pride of Waltham	1881	W. Paul & Son	Light salmon pink.
39	6·0	4	Dr. Sewell	1879	Turner	Crimson scarlet.
39	6·0	4	Lord Macaulay	1863	W. Paul & Son	Bright crimson, shaded.
39	6·0	7	Magna Charta	1876	W. Paul & Son	Bright pink carmine.
39	6·0	5	Rosieriste Jacobs	1880	Ducher	Dark velvety red.
40	5·7	5	Alfred Dumesnil	1879	Margottin fils	Light crimson rose.
41	5·3	13	Auguste Rigotard	1871	Schwartz	Cherry red.

TEA AND NOISETTES.

Position in Present Analysis.	Average Number of Times Shown in the Three Years.	Number of Times Shown in 1888.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	37·8	50	Catherine Mermet	1869	J. B. Guillot fils.	Light rosy flesh.
2	37·3	34	Maréchal Niel	1864	Pradel	Deep golden yellow.
3	35·7	46	Innocente Pirola	1878	Madame Ducher	White, slightly shaded.
4	33·3	57	Marie Van Houtte	1871	Ducher	Yellowish white, tinted rose.
5	31·0	43	Souvenir d'un Ami	1846	Belot-Defougère	Pale rose.
6	30·7	37	Souvenir d'Elise Vardon	1854	Marest	Yellowish rosy cream.
7	30·3	24	Caroline Kuster	1872	Pernet	Lemon yellow.
8	28·9	24	Comtesse de Nadaillac	1871	J. B. Guillot fils.	Rosy flesh and apricot.
9	28·3	28	Niphetos	1844	Bougère	White.
10	25·3	27	Jean Ducher	1874	Madame Ducher	Salmon yellow, shaded peach.
11	23·5	21	Madame de Watteville	1883	Guillot	Pale lemon, pink margin.
12	21·0	51	Madame Lambard	1877	Lacharme	Salmon, shaded rose.
13	20·7	32	Honourable Edith Gifford	1882	Guillot	Blush white, tinted pale rose.
13	20·7	26	Madame Cusin	1881	Guillot fils	Violet rose.
14	19·7	28	Anna Ollivier	1872	Ducher	Pale rosy flesh, shaded buff.
15	19·0	19	The Bride	1885	May	White, tinged lemon.
16	18·0	14	Etoile de Lyon	1881	Guillot	Bright sulphur yellow.
17	17·7	34	Madame Bravy	1848	Guillot père	White, flushed pale pink.
18	15·7	31	Rubens	1859	Robert	Creamy white.
19	14·3	18	Madame Willermoz	1845	Lacharme	Creamy white.
20	13·7	14	Souvenir de Paul Neyron	1871	Levet	Creamy white, tinted rose.
21	11·0	2	La Boule d'Or	1860	Margottin	Golden yellow.
21	11·0	9	Princess of Wales	1882	Bennett	Pale rosy yellow.
22	10·7	23	Francisca Krüger	1879	Nabonnand	Coppery yellow, shaded rose.
23	10·0	10	Souvenir de G. Drevet	1884	Guillot	Salmon white, shaded pink.
24	9·0	12	Devoniensis	1838	Foster	Creamy white.
25	8·7	4	Madame Margottin	1866	J. B. Guillot fils.	Citron yellow.
26	8·3	3	Madame H. Jamain	1869	J. B. Guillot fils.	White, shaded yellow.
27	7·0	13	Jules Finger	1879	Madame Ducher	Rose, shaded silver.
28	6·7	7	Belle Lyonnaise	1869	Levet	Deep lemon.
29	6·3	9	Perle des Jardins	1874	Levet	Bright straw colour.
30	5·7	4	Madame Welche	1878	Ducher	Pale yellow, flushed pink.
31	5·3	4	Madame A. Jacquier	1879	J. B. Guillot fils.	Light pink, shaded yellow.

tions with those they occupied at the Crystal Palace Show this summer it will be seen approximately to what extent these climatic and other causes have affected them. Monsieur Noman, for instance, loses this year eighteen places, Marie Rady seventeen places, Duchesse de Vallombrosa sixteen, Beauty of Waltham twelve, Annie Laxton and Madame Lacharme eight, and Star of Waltham, Violette Bouyer, Le Havre, and Reynolds Hole six places. Marie Cointet, which stood at No. 10 in 1886, and as high as No. 7 last year, disappears entirely from this year's list when taken by itself. On the contrary, when tested in the same way a few sorts appear to have delighted in this cool and dripping summer. For example, Général Jacqueminot rises thirteen steps, Duke of Edinburgh (which the season for once suited admirably) and Sénateur Vaisse each twelve steps, Dupuy Jamain eleven, E. Y. Teas and Louis Van Houtte ten, and Marie Verdier seven. Duchesse de Morny, which did not find a place at all in the last analysis, judged by this year's form alone, would stand No. 17.

Out of the sixty-five varieties in the list of Hybrid Perpetuals there are only seven which are less than eight years old. These, which we may term the newer Roses, are thus placed:—First at No. 6 comes a Rose possessing perhaps more good qualities than any other member of the Hybrid Perpetual family, and that is Ulrich Brunner (1881). Immediately following it are Lady Mary Fitzwilliam and Merveille de Lyon, both brought out in 1882. The former of these is a very dwarf grower, but otherwise an extremely free flowering and high class Rose, while Merveille de Lyon is well known as the most dependable of all the white H.P.'s. Skipping over a couple of dozen older sorts we reach at No. 26 Her Majesty (1885). Next to this grand exhibition Rose, which this year owing to adverse circumstances occupies a much lower place than it is entitled to, stands Violette Bouyer (1881), a variety that the damp weather of last summer did not at all favour. At No. 28 we find Heinrich Schultheis (1882). This is likely to win its way more and more into public favour on account of its excellent habit of growth and distinct and delicate shade of colour. Pride of Waltham, which came out in 1881, is again low down in the analysis, doubtless eclipsed by its older rivals Marie Finger and Eugénie Verdier.

Turning now to the Teas and Noisettes, and treating the more established varieties in the same way as the H.P.'s, it will be found that the past Rose season, as was the case with the Hybrid Perpetuals, proved detrimental to more kinds than it benefited. For instance, that hot-season variety La Boule d'Or, as compared with its average position in the two previous years, loses as many as fourteen places, Caroline Kuster and Etoile de Lyon nine, Comtesse de Nadaillac and Madame Margottin eight, Maréchal Niel and Niphetos five, and Belle Lyonnaise four places. On the other hand Rubens gains nine places, Marie Van Houtte eight places, and Madame Bravy seven places. Madame Lambard, the favoured Tea Rose of the year, which was set up in only ten winning stands in 1886, and in but two in 1887, appeared at the last exhibition in no fewer than fifty-one different stands.

Judging by this analysis the Teas are making far more rapid progress than the Hybrid Perpetuals. Although the list of Teas and Noisettes is only about half as long as that devoted to the H.P.'s, yet as many as seven varieties, or about one-fifth of the whole number, have come out since 1880. The 1881 Teas are represented at No. 13 by Madame Cusin, and at No. 16 by Etoile de Lyon. The past season does not appear to have suited the former, notwithstanding its sturdy petals, while Etoile de Lyon, being very full, and also thin-petalled, suffered of course considerably from the continued damp and cold weather. As compared with its position at the two previous shows it loses nine places. Of the Teas distributed in 1882 two also find places in this analysis—the Hon. Edith Gifford, a welcome addition to the Devoniensis race, at No. 13, and Bennett's Princess of Wales at No. 21. Although only sent out in 1883, that elegant butterfly-like variety, Madame de Watteville, already stands No. 11 in the analysis, and ahead of all the other newer Roses Souvenir de Gabrielle Drevet (1884) also takes up a good position (No. 23) considering how little it is as yet known. The Bride, only sent out in 1885, is one of those few fortunate Roses which become popular at once. It is a nearly white version of the Rose which stands at the head of the list of Teas and Noisettes in the present analysis—Catherine Mermet.

The following short lists of choice varieties, which are recommended as the best for general cultivation, will, I trust be found useful, not only to those just commencing Rose-growing, but also

to those who, having mostly only inferior sorts, may wish to improve their collections. These selections are very similar to those I gave last year, but having again gone carefully through them, I do not well see how they can as yet be further improved.

Hybrid Perpetuals.—*Light-coloured Varieties.*—Madame G. Luizet, La France, Merveille de Lyon, Captain Christy, Baroness Rothschild, Marguerite de St. Amand, and Marie Finger. *Medium Reds.*—François Michelon, Ulrich Brunner, Marquise de Castellane, Marie Verdier, Comtesse d'Oxford, Heinrich Schultheis, and Dupuy Jamain. *Reds.*—Marie Baumann, A. K. Williams, Alfred Colomb, Prince Arthur, Le Havre, E. Y. Teas, and Ferdinand de Lesseps. *Dark Varieties.* — Charles Lefebvre, Horace Vernet, Duke of Wellington, and Louis Van Houtte.

Teas and Noisettes.—Innocente Pirola, Marie Van Houtte, Souvenir d'un Ami, Caroline Kuster (N.), Madame de Watteville, Madame Lambard, Hon. Edith Gifford, Anna Ollivier, Rubens, and Perle des Jardins.

Hybrid Tea.—Grace Darling.

Bourbon.—Souvenir de la Malmaison.

Climbing Roses.—Belle Lyonnaise (T.), Gloire de Dijon (T.), Bouquet d'Or (N.), William Allen Richardson (N.). *Summer Flowering Varieties.*—Blairii (H.C.), Charles Lawson (H.B.), Coupe d'Hébé (H.B.), Bennett's Seedling (Ayr.) Felicité Perpetué (Evergreen), and Madame Plantier (H.N.).

In conclusion, I have to thank Mr. H. Appleby, Mr. J. Bateman, Mr. J. Burrell, Mr. T. W. Girdlestone, Mr. W. J. Jefferies, and Mr. G. Mount for their kind assistance in helping me to take down the names of the Roses at this year's exhibition.—E. M., *Berkhamsted.*

HALE'S EARLY PEACH.

I have frequently written in favour of this Peach, but my remarks have not always been well received, some growers asserting it is not a good one; but after another year's experience that is not my opinion. We have a tree of it in a cool house, which invariably bears a good crop. This year we gathered the first fruits from this tree on June 20th. They were well formed, fleshy, highly coloured, and very agreeable in flavour. Another large tree in the open that grows against a wall facing the east supplied ripe fruit on August 10th; and like those under glass these were very fine Peaches. I do not hold that it is unique in flavour. It is second-rate in this respect, but in all others first-rate. It grows freely, is an abundant bearer, rarely fails to produce a full crop, and its ripening so early is greatly in its favour. I do not know a more certain Peach to bear, swell, and ripen. I have never known it fail; and in the hands of amateurs, or in positions not the most favourable for successful Peach culture, it would, I feel sure, prove invaluable. As we only require Peaches for home use in succession, we do not grow more of it than the two trees in question; but if I were growing Peaches for market, I would plant it by the dozen. A very large fruit tree nurseryman told me the other day that Hale's is now one of their leading Peaches. They have a difficulty in keeping pace with the demand. This has been by no means a first-rate year for open-air Peaches. We have scores of late fruits now that will never ripen, and our determination to give up growing very late Peaches is nearer being accomplished now than ever it was.—J. Muir, *Margam, South Wales.*

GARDENERS' EDUCATION AND THEIR SOCIAL POSITION.

The time is fast drawing nigh when the usual "Lectures to Young Gardeners" will probably appear in our Journal; and perhaps the usual earnest advice will be given them to improve their position by devoting themselves sedulously to the study of most of the sciences having a bearing directly or indirectly upon horticulture, and including a knowledge of Latin, French, and shorthand. This advice in itself is excellent; but the question has frequently suggested itself to me of why should a menial servant like a gardener be expected to know aught of botany, geology, chemistry, land surveying, natural phenomena, Latin, French, shorthand, &c.? Legally the gardener possessing a knowledge of all or a part of the above subjects, besides being a first-class gardener, is no more than the equal of the scullery maid or stable helper, who perhaps can only write their names in a very illegible manner. Politically, in some respects and under certain circumstances, he is the inferior of his subordinates; and socially he is very little if at all superior to either scullery maid, stable helper, or garden labourer. Why should he be? He is the paid servant of the same master or mistress; and so long as each servant performs his or her duty faithfully and well it is all the master or mistress desires or expects, and they treat each servant with equal consideration, and rightly so. Pecuniarily the gardener is very frequently the inferior of the coachman, the cook, or the butler; and yet the coachman is not expected to be a veterinary surgeon, or the cook an analytical chemist, or the butler or valet a classical scholar! Then why should gardeners become the learned men they are recommended to become? Is it because 30s. per week is too extravagant a price to pay for the qualifications of an old-fashioned gardener? Or is it to be preparatory to claiming a different recognition legally, and of elevating themselves socially? If for either or both of the latter, it is time for gardeners to bestir themselves.

It cannot be too deeply impressed upon the minds of respectable and well educated youths who seriously think of becoming gardeners, that by doing so they voluntarily become menial servants, and occupy the position of such, no matter what their education or previous social position. Probably many young men enter domestic service thinking they are entering a "profession," because gardening is so miscalled frequently, and it is equally probable that such young men would find employment quite as congenial to their tastes in directions other than domestic service if they were cognisant of all the facts, but too frequently they only realise their true position when it is too late to retrace their steps. The ranks of gardeners are much too full, and respectable and educated young men would benefit themselves and gardeners in general by selecting other occupations.

It is astonishing that people in good social position will occasionally endeavour, and sometimes succeed, to make one of their sons a gardener; this is frequently because they see only the sweets of the occupation, and are nearly, or quite, ignorant of the bitters, and of the price their sons have to pay in after life. Such parents would study their children's best interests if they made curates of them instead, for though, perhaps, their pecuniary position for the time being would not be much better than that of gardeners, yet their social position would be such as not to produce any after regrets on that score, and their chances of obtaining an average annual income of about £300 per year would be as about 18,000 to perhaps less than eighteen.

Then there are numbers of young men whose parents could not afford to give them a proper University education. Let such young men turn their attention to engineering, telegraphy, music, mechanics, chimney-sweeping, anything rather than gardening. It is painful to see the numbers of educated, bright, intelligent youths in our large private gardens and in our nurseries who are doomed to disappointment and domestic servitude, but one remove from slavery in after years; but it is the lot of nearly all of them. There is but one Chatsworth, one Trentham, one Drumlanrig, one Dalkeith; but how many thousands of gardeners are there who entered the calling of gardening hoping that they might ultimately attain such situations or something approaching them? for though they would necessarily be menial servants, yet the remuneration would bring with it some compensation for their low social status; but probably about 90 per cent. of gardeners in this country do not receive more than £80 per annum as wages, yet we have writers periodically recommending young gardeners to acquire something nearly approaching a University education, and I have just read of a training college being established at Swanley. What does all this mean? It means that masters and mistresses are to be constantly supplied with an article for 30s. that as compared with other articles of very similar manufacture is, or should be, worth 50s. in the market; but these articles are supplied at such low prices because the supply is far in excess of the demand. And head gardeners themselves are very much to blame for this. Many of them, for the sake of a few pounds premium, keep employing these young men to do work that in some cases their own handy labourers would do as well or better, and infinitely more to the comfort of the gardener. The labourer is content to remain a labourer, and he will remain in the same garden year after year and learn to take such pride in his work that he ceases to be a trouble. For every labourer that is treated in this way there is one gardener less in the market. Frequently there are four or six young gardeners being manufactured when there is only requirement for two or three. I think head gardeners would study the best interests of themselves and their fellows, both at present and in future, if they would employ fewer apprentices and so-called journeymen and employ more labourers in their immediate locality.

By all means let gardeners receive a University or college education if at the same time they are going to receive corresponding remuneration and social status; but will they receive either or both of the latter?—A. Bighter.

NOTES ON POTATOES.

I was surprised to hear how small the Potatoes were by "A Kitchen Gardener." On September 28th I finished lifting 6¼ acres, and find them very good as to size. The sorts are Vicar of Laleham, White Elephant, Schoolmaster, and Beauty of Hebron. Some were diseased of Vicar of Laleham, not so many of White Elephant or Beauty of Hebron, and very few of Schoolmaster. I have another field of 8 acres to lift; the sorts are Redskin Flourball, Imperator, Reading Giant, Reading Hero, and Magnum Bonum. When they are lifted I will send you the result. I have also sixty-five sorts planted side by side, one row each, but some of them are very bad, especially the coloured sorts. The white-skin sorts seem to resist the disease best with me. I grow about 16 acres, and I always expect to get at the least ¾-ton good "ware" from every ton grown, taking one sort with the other, and we seldom have many diseased. The soil is very shallow with chalk subsoil, but the sixty-five sorts are grown on the only piece of damp soil I have, and being a wet season they have been affected more. I suffer very much from the rooks working the Potatoes. Thus I have to earth them very close on the top. They are earthed with the ridging plough and brought to a close ridge. That may be the reason they are not so very bad. I suppose that is the plan recommended by Mr. Jensen. I may add the sixty-five were not earthed nearly so high, and the work was done by hoes in the usual way.—C. Osman.

I think this year of 1888 has been the worst for Potatoes since 1879 both for disease and smallness of crop. Round here they will

not average more than a pot of 90 lbs. to the perch. The worst affected by the disease are second early sorts. White Rose and Beauty of Hebron are scarcely worth lifting, and White Elephants are much diseased. I tried Sutton's Early Market. I had 14 lbs. of seed, and have nearly 11 bushels of fine tubers, with scarcely any disease, but some have become diseased since being lifted. Sutton's Seedling, Satisfaction, and Abundance have proved good sorts, and will be largely planted next year. They have proved the three best out of eight varieties. The best way of storing Potatoes that I know of is in pits 2 feet wide, and from 1 to 3 feet deep. As I have helped to store several thousand tons in my time in that way, they should not be any wider, as when narrow they keep the wet out better.—SINGLE-HANDED.



EXHIBITION JAPANESE CHRYSANTHEMUMS.

A CORRESPONDENT sends the following list of Japanese Chrysanthemums staged in first-prize stands in open competition at twelve of the principal shows in 1887. The list has been compiled from the reports published in this Journal. The numbers after the names of the varieties indicate the number of winning stands in which they were included. The shows were the Crystal Palace, Kingston-on-Thames, the National Chrysanthemum Society, Portsmouth, Brixton, Lewisham, Ascot, Sheffield, Birmingham, Hull, Pontefract, and Liverpool. The exhibitors were Messrs. C. Gibson, Packman, Molyneux, Mursell, Shoesmith, Page, Parker, Mease, Daniels, and Cox.

The varieties are as follows :—Fair Maid of Guernsey, 12 ; Madame Clemenee Audiguier, Triomphe de la Rue des Châlets, and Meg Merrilies, 11 ; Mdlle. Lacroix and Jeanne Délaux, 10 ; Criterion, Boule d'Or, and Madame J. Laing, 9 ; Thunberg, Belle Paule, and Val d'Andorre, 8 ; Japonais, 7 ; L'Adorable, Ralph Brocklebank, and Golden Dragon, 6 ; Maiden's Blush, Comte de Germiny, Marguerite Marrouch, Baronne de Prailly, and Soleil Levant, 5 ; M. Tarin, Elaine, Mdlle. Blanche Pigny, M. Astorg, Mr. J. Laing, M. Freeman, Duchess of Albany, and M. Burnet, 4 ; Fernand Feral, M, Délaux, Grandiflorum, Mdlle. Moulis. La Triomphante, Martha Harding, and Carew Underwood, 3 ; Hiver Fleuri, M. Ardene, Album plenum, Peter the Great, and Edwin Molyneux, 2 ; William Holmes, Agréments de la Nature, Dormillion, Mdlle. B. Rendatler, Red Gauntlet, Avalanche, Mrs. Townsend, Madame Feral, Snowstorm, Mrs. W. Harris, Roi des Japonais, Gloriosum, Balmoreau, Source Japonais, Stanstead White, La Seeptre Toulousain, and Annie Clark, 1 each.

CHRYSANTHEMUMS AND THE FROST.

CULTIVATORS of the above will have reason to remember the morning of Wednesday, October 3rd. From 10° to 13° of frost were registered in this district after a heavy rain on Tuesday. Few had the whole of their collections inside, and in some places not a plant was housed. I have seen several which are completely ruined. Where the buds are well advanced not so much damage will be experienced, but in all cases where they are small and just taken, when they are in a very tender stage, on close examination will be found to be of little use. This is very disappointing after all the trouble that has been bestowed on them, and we are within a few weeks of their flowering season, when all would be anxiously looking forward for the reward of their labour. Up to the first week in October I have always considered them safe outside, and have never before known any very serious damage done to them.—EDWIN BECKETT, *Aldenham House Gardens, Elstree.*

NATIONAL CHRYSANTHEMUM SOCIETY.

☞ A GENERAL meeting of members of this Society will be held on Monday evening, October 15th, 1888, at "Anderton's Hotel," Fleet Street, City ; the chair to be taken by E. Sanderson, Esq., the President, at seven o'clock precisely. This meeting is convened in accordance with rule 5, and with the special object of giving an opportunity to all members to bring forward any proposals or suggestions that may have occured to them and are in the interest of the Society. All new members elected at this meeting will receive a pass for the November Fête and other Shows and meetings.

The grand provincial Show, 1888, will be held in the Corn Exchange, Sheffield, on Friday and Saturday, November 16th and 17th. Schedules for this Exhibition have been forwarded to all members. Any further particulars may be had on application to either of the Hon. Secretaries, Mr. W. K. Woodcock, Hon. Sec., Sheffield Chrysanthemum Society, The Gardens, Oakbrook, Sheffield ; or Mr. William Holmes, Hon. Sec. National Chrysanthemum Society, Frampton Park Nurseries, Hackney. A Chrysanthemum Conference will probably be held on the evening of the first day, further particulars of which will be duly announced. Visitors to Sheffield will be admitted after three on Friday at half-price on presentation of the return half of the railway ticket. The Midland Railway Company will convey exhibits at owner's risk at single rate for the double journey provided they remain the property of the exhibitor. A number of cheap excursion trains will be run into Sheffield on Saturday, November 17th.

A meeting of the Floral Committee of the National Chrysanthemum, Society was held at Westminster on Wednesday last, October 10th, but the exhibits were not numerous. Present : E. Sanderson, Esq., in the chair, and Messrs. H. Ballantine, W. Holmes, H. Cannell, C. Gibson Lewis Castle, G. Gordon, R. Dean, G. Stevens, Kendall, R. Owen, and G. S. Addison.

Two blooms of the Japanese variety Edwin Molyneux were shown by Mr. Molyneux from Swanmore Park Gardens, the certificate awarded las year being confirmed. The blooms were very large, deep, the florets broad, intense crimson, with a gold reverse. Mr. R. Owen of Maidenhead sent a stand of new Japanese varieties, comprising Anna Roudière, exhibited last year ; M. Levêque (Délaux), described as a sport from James Salter, with straight spreading florets of rather deeper colour (commended) ; Sam Henshaw, with incurving broad florets of a silvery pink tint ; Mr. W. Holmes, very bright and fresh ; Rose Beauty, with narrow fluted twisted rose florets (vote of thanks).

Messrs. H. Cannell & Sons, Swanley, exhibited specimens of select ornamental Beet leaves, and very fine double Tuberous Begonias of varied colours (vote of thanks). A certificate was awarded for the following :—

Chrysanthemum Dorée (W. & G. Drover).—A charming Japanese variety in the way of Mr. Garnar, with fluted, recurving, and slightly drooping florets, of a bright clear pale yellow tint.

CHRYSANTHEMUM TUBE FIXERS.

PER parcel post I take the liberty of sending you one of my Chrysanthemum tube fixers, and also an electro block showing the contrivance, suitable for printing, along with a description of it. As you will notice

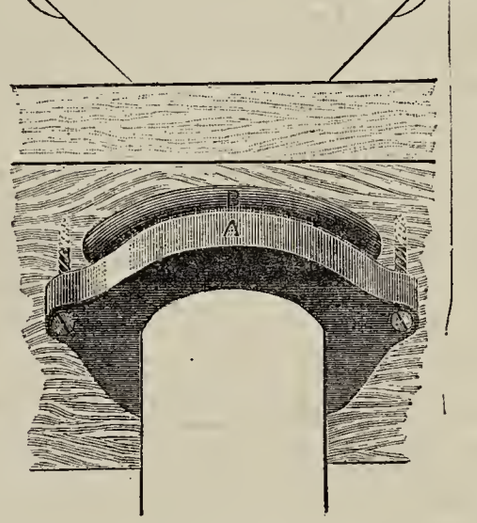


FIG. 37.—TUBE FIXER. A. socket, B. ring.

(fig. 37) it consists of a tinned cast iron socket (A) containing an india-rubber ring (B) and is fastened to the top of the exhibition board over the hole, or it may be fastened to the under side of the board. By tightening or slackening the screws it will fit any size tube within certain limits, or the tubes may be made perfectly secure at any desired height for travelling. This contrivance gets over the defect of existing appliances, which raise the cup out of the tube, and at the same time raise the flower out of the water. I hope it will be taken up by some of the leading florists and sold at a cheap rate. I send you one fixed, and one not fixed, on board.—EDW. HARLAND, *Hull and East Riding Chrysanthemum Society.*

[The appliance sent is perfectly effective in its working, the tube being easily moved, and remains firm in any desired position.]

GRAPES SCALDING.

I NOW see that Mr. Bardney's article, page 162, was only intended for the very young and inexperienced, but I fear there are many experienced gardeners that differ on this subject from your correspondent. But I feel honoured by being numbered amongst this class. So this must be my excuse for daring to question some of his statements. There is much in Mr. Bardney's first article that I heartily endorse, but I still take exception to the point at issue. "It is no more difficult to scald Black Hamburgh and Madresfield Court than Lady Downe's." In spite of elaborate argument, Mr. Bardney has not come forward with

anything substantial to prove this statement. It is pure theory. He admits that it would be gross carelessness for a professional gardener to scald Black Hamburgh. but he does not add that it would be the same thing to scald Lady Downe's. Every practical gardener knows that with the utmost care this Grape will scald more or less in the majority of cases in spite of every means of ventilation or care.

Mr. Bardney will admit that scalding Black Hamburgh as badly as Lady Downe's would be gross carelessness. Conditionally it is admitted both are produced by the same cause. Possibly they are, but it would require an extra amount of the "same cause" to scald the former as badly as the latter. This is the chief difference between your correspondent and myself. So we are nearly agreed, for I have not brought forward any theory as to the reason of scalding, but wished to show they could not be compared as equals in the evil. Attention is drawn to the unseemly mixture of Lady Downe's in an early Hamburgh house. Hardly anyone can be more sensible of this fact than myself, but it is only one case of many that could be cited on this point. But under the treatment given there is no excuse for the one variety scalding more than the other if they are both as susceptible to the evil. Overforcing is, no doubt, the cause of many ills that affect our Grapes. But I fail to see that Lady Downe's, grown as naturally as possible, can be overforced systematically. If so, it takes very little forcing to injure them. I have seen Black Hamburgh forced very hard, but never remember seeing them scald.

That Lady Downe's will scald without the sun's direct action I think all will acknowledge, for houses that are shaded will sometimes scald as badly as those that are not shaded, except by foliage. There is something different about this Grape; it is either weak constitutionally, or it differs structurally, for the berries do not stand the same amount of treatment as the majority of other Grapes. When we get at the real cause of the scalding, then I think we shall find an infallible remedy, but at present, what appears adequate to prevent the evil in some places is totally inadequate in others.—JAMES B. RIDING.

THAT this annoying phenomenon is more generally prevalent than the knowledge necessary to avert its disastrous effects the various opinions of numerous correspondents fully testify. Having had some experience in dealing with some rather persistent attacks I venture to submit the ideas I have formed as to its cause and prevention.

Regarding the cause, I think we are all agreed that the wrong disposition of heat and moisture are the predominant forces which produce the effect; but in reference to the action of these agents there is, I perceive, much divergency of opinion. In the correct elucidation of Mr. Young's proposition, "What, then, is the cause of moisture being condensed on the berries?" will I venture to say be found the lever that will give the uninitiated power to cope with the difficulty. This correspondent's theory "That an overheated atmosphere caused by the sun shining suddenly on the house without sufficient ventilation, as well as insufficient heat in the pipes to prevent the berries becoming cold," may, to Mr. Bardney's mind, appear somewhat vague, and possibly heterodox if he is a firm believer in "somebody's" theory on the "liquefaction of vapour." That the writer of that useful pamphlet may be well versed in reference to the formation of dew on the open ground, and in that direction his theories may be infallible; but when it comes to the natural action of air, heat, and moisture in an artificial structure like a glass house they may in many instances be at a discount. "Condensed moisture on the berries of Grapes is due to a low temperature," says Mr. Bardney, "and the berries being naturally colder than the atmosphere they cool the air in contact with them, and the consequence is that some of the vapour it contains is quickly deposited. As the temperature rises the air takes up the moisture which it had previously deposited, and the result is evaporation. Instead of condensation taking place when the temperature rises evaporation takes place, and the air is charged with heated vapour that practically 'stews' the berries unless means of escape for it have been provided." This I take to be the gist of Mr. Bardney's arguments, and in it I think we can trace a desire to prove the case by analogy with the generally accepted theory of the deposition of dew—viz., the cooling of an atmosphere laden with moisture, and consequently its inability to retain it suspended in an invisible form, hence it deposits in the form of tiny globules of water on points of leaves. grass, &c. This form of condensed moisture occurring in vineries and plant houses nearly every cultivator is familiar with, caused undoubtedly by early closing with sun heat and plenty of moisture being distributed, consequently a high humid atmosphere followed by a rapid fall and deposit of dew if there is insufficient heat in the pipes to maintain the temperature above dew point. But in all well-regulated vineries this shutting up with a strong sun heat should only be practised during the early part of the growing season, and then the advice to allow a low night temperature is open to grave question if this course is followed. The first part of Mr. Bardney's quotation will be correct enough, "Condensed moisture on the berries of Grapes is due to a low temperature," but the second part, alluding to berries being naturally colder than the atmosphere and thereby favouring a deposit of dew, is altogether contrary to the present phase of "liquefaction of vapours," as I cannot but think that if Mr. Bardney will recollect in cases where moisture has been condensed owing to a low temperature he must have observed the partiality the liquefied vapour has for points of leaves, tendrils, and other sharp protuberances. But it is not in this fact that injury is caused, he argues, but when the temperature rises, and this moisture is again absorbed or evaporated from the berries and the leaves, this vapour-charged and highly heated atmosphere "practically stews the berries." No mention is made as to how the leaves and tender shoots fare under this ordeal. Possibly Mr. Bardney's theory on leaf-scorching is correct, which is, I believe, that such an occurrence cannot take place if means are taken to insure the preservation of a moisture-laden atmosphere. We never hear of Cucumbers being injured by "stewing," though they are compared to Grapes subjected by some successful cultivator to abnormally high temperatures.

Again, why does scalding generally occur on the shady side and in the centre of the bunch? If Mr. Bardney's theory is correct all and every berry should fare alike; also for a full and complete remedy a ready means of escape for the moisture evaporated by the sun raising the temperature is recommended, though some correspondents affirm that free ventilation was only partial in staying the mischief. To that I think we must look in another direction for the solution of the enigma. Mr. Young's theory, as given at the commencement, though perhaps a trifle too concise, is, I am inclined to think, the correct one. The generally accepted law of condensation may be right enough and work on exactly the same principle in the open as in a glass structure, but when we come to evaporation the artificial restrictions materially affect its working. Under natural conditions scalding of fruits or scorching of foliage seldom or ever occurs owing to the freedom of evaporation of moisture deposited on vegetation. But under artificial treatment the case is different. The sun shining on the house raises the temperature, and evaporation takes place—that is, the heated air by chemical affinity absorbs moisture from surrounding substances up to this point. I agree with Mr. Bardney and somebody's theory on the "liquefaction of vapours," but here I depart, owing to artificial means setting aside the common rule of Nature. The sudden rise and compression in the temperature of a glass structure when closed, and sometimes even when ventilated, is very rare in Nature, therefore we may expect to find results the causes of which are apparently obscure though natural enough when understood. This, then, is my theory, that a rapid rise of the temperature, owing to the sun shining suddenly on the house, enables the atmosphere to absorb moisture; the berries which have arrived at a period of density of tissue are unable to heat so quickly, consequently by a law of Nature any object of a less temperature than the air it is surrounded by cools the air about it, so that if the air is charged with moisture the influence of the cold body renders it incapable of carrying it, consequently it is thrown down or condensed on that body, as illustrated by the objectional state of affairs known amongst Grape growers as "sweating." This moisture not being evaporated quickly becomes heated, consequently the scalding of the skin of the berry takes place. Why the berries are generally most damaged on the side opposite to that nearest the sun is a circumstance that is explained by the more rapid warming of their substance and their non-liability to act as refrigerators.

This, then, I think is the solution which was shadowed by Mr. Young, and the main difference between Mr. Bardney and the foregoing is in the way the moisture is condensed on the berries, but it is in the proper elucidation of this circumstance that enables us to propound a remedy, or, better still, a preventive. With Mr. Young I favour sufficient heat in the pipes to prevent the berries getting cold, and also to obviate a too humid atmosphere, and coupled with intelligent ventilation, Lady Downe's or any other variety of Grape may be grown without any scalding taking place.

As to some varieties of Grapes being more susceptible to this form of injury than others, I venture my humble opinion that all Grapes are liable to scald if proper precautions are not taken to prevent it, though some varieties more than others, owing to the physical structure of their berries, Lady Downe's especially so, the large solid formation of its seeds, and general dense construction, renders it unfit to withstand rapid changes of temperature. This is, I think, proved by the injury taking place during the stoning period, when the solidity of the berry is increasing, while at the same time the skin is in as tender a condition as previous to attaining this stage, and in many cases the treatment they receive in respect to damping down and closing being continued the same as earlier in the season, consequently aggravating the evil. I am of opinion that if the treatment that is generally given when colouring commences—viz., more air and drier, but not necessarily a lower temperature, was put in force during stoning, scalding would soon be unknown.—M. COMBE.

MR. BARDNEY does not strengthen his case in the least on the main question at issue by his remark that his article was intended for the young gardener and amateur. Mr. Bardney now says that he never suggested that these two varieties grown together in the same house would both scald, but he did say that it was just as easy to scald the Black Hamburgh as Lady Downe's. I conclude by the above statement that he has had disagreeable experience in the scalding of the Black Hamburgh; if such is the case I would advise him to alter his practice. The "main points" which he thinks I, in common with your other correspondents, have overlooked, have not the least bearing on the portion of his article which I disputed. If he thinks he will succeed in convincing the readers of the Journal, he has a hard task before him. Surely he cannot be in earnest concerning the part of his article which I did not comment on, and which he says tells against me. As a matter of fact he has already had his answer when I stated that it "required gross carelessness to scald the Black Hamburgh." Can Mr. Bardney prove that the Black Hamburgh will scald under the slight conditions which will scald Lady Downe's? Your correspondent also professes to be amused at my allusion to the cost of Grapes, it being foreign to Grapes

scalding, though it has as much practical bearing on the subject as his own remark at page 260—viz., "Such action may be tolerated when the cost of production and the value of the crops are not placed side by side. It is the reverse of economy to leave the house open and maintain the desired temperature by the aid of fire heat. Expenses of this nature are not warranted at the present price of Grapes." I can quite understand his making such statements. Fire heat is used very judiciously by me. In the same article, a little further on, we read on syringing Vines: "I do not believe in such a practice, because it is liable to injure the bloom." If these Grapes were so good (and I do not dispute the fact) through this heavy syringing night and morning, why should Mr. Bardney qualify his statement in such a manner? If these Vines are really syringed in the manner as stated, what of the bloom? The condensation as referred to by me is very different to that which is deposited by Nature in the open air. If Mr. Bardney has a house of black Grapes, let him keep the ventilators closed until the sun has shone a short time on the house, and he will soon notice a mist on the Grapes. The above is practically what happens to Grapes when they scald, through the house being too close and cold, or even if shut up too early. —A. Young.

I am very pleased to read the interesting communications which appeared in your last issue. According to Mr. Bardney's communication on page 319, he is of opinion that I think the scalding of Lady Downe's Grape constitutional. I fail to conceive where he could draw such conclusions. What I said was this—that Lady Downe's would scald sometimes under the best of management, and I contend that it will, and especially in dull wet seasons. Nevertheless, I do not say that it cannot be grown without scalding, and if Mr. Bardney has grown it without being so affected, or any other correspondent, I should be pleased to read the cultural instructions. I wish to draw attention to a house of Grapes that was under my management some time ago. The house in question was a late one, and a lean-to due south, with the necessary appliances with respect to artificial heat, but nevertheless we did not think it necessary to use it to encourage the commencement of growth, but, on the other hand, allowed the Vines to start naturally. The varieties consisted of Black Hamburgh, Black Alicante, Lady Downe's, and Mrs. Pince. Growth commenced in March, the first named taking the lead by about ten days or so. When they had all broken well into growth we thought it necessary to turn a little fire heat on, and gradually increasing it as growth advanced. Let it be understood that the object of these remarks is to draw particular attention to the stoning period. Black Hamburgh led the way, and the others followed in the order they are given, and, notwithstanding the attention they received with respect to air-giving and an increased artificial temperature, together with a dry atmosphere, Lady Downe's was the only one affected, and to quote the words Mr. Bardney uses, scald into "bits of bunches." This seems a singular thing to me. Was this "fancy" or gross carelessness? It cannot be attributed to over-forcing, as I have shown, so perhaps some of your correspondents will take the matter up and give their opinion. I leave the question open as to whether the scalding of Lady Downe's is constitutional or not.—R. Kirby.

PLANTING FLOWER BEDS FOR SPRING.

Flower beds when cleared of their summer occupants may be levelled with the rake, and again be filled with such spring-flowering plants as Golden Gem Viola, Daffodils, the common Primrose, and Alyssum saxatile compactum, four distinct shades of yellow. Myosotis dissitiflora, Imperial Blue Viola, Nemophila insignis, and Aubrietia deltoides afford a like number of shades of colour, ranging from light blue to purplish lilac. In white, Daisies, Arabis albida, and Dean's Viola White Bedder will be found three white free-flowering plants; and in red Daisies, Blood Red Wallflower, and Silene pendula ruberrima we have materials for supplying masses of red and pink. In addition to Snowdrops, Crocuses, Hyacinths, Tulips, and other bulbous plants, there are many hardy perennials besides those enumerated above which are suitable for embellishing the spring garden; but those already mentioned, if the colours are judiciously arranged in masses, will be found sufficiently floriferous, effective, and varied in colour to render the garden in spring as charmingly beautiful as it can be made in summer.

The beds in which it is intended to plant the double Daisies may have a sprinkling of fresh soot mixed with the surface soil as a preventive of the attacks of the grubs of the daddy-longlegs, which are frequently very destructive to these old-fashioned spring-flowering plants. In every case take up the plants with soil attached to the roots, and plant the same depth in the ground as they were before, making the soil moderately firm about the roots.—H. W. Ward.

ROYAL HORTICULTURAL SOCIETY.

October 9th.

A small gathering of exhibits greeted the members of the Committee and the few visitors who assembled in the Drill Hall, James Street, Westminster, on Tuesday last, but the group of Ferns from Tottenham was one of exceptional merit.

Fruit Committee.—Present—Dr. Robert Hogg (in the chair), and Messrs. H. J. Veitch, J. Lee, S. Ford, A. H. Pearson, J. Burnett, R. D. Blackmore, W. Warren, J. Cheal, G. T. Miles.

W. Roupell, Esq., Roupell Park, was awarded a cultural commendation for excellent samples of Canon Hall Muscat Grape, grown in an 11-inch pot; also Gros Colman and Black Hamburgh grown in an unheated house for over fifty years. Mr. C. Ross, Welford Park Gardens, Newbury, sent specimen of a seedling white Grape; and Mr. J. Bradshaw, Downshire Gardens, Hillsborough Castle, Co. Down, sent a specimen of a seedling white Grape named Lady Downshire, but no award was made for either. Mr. G. Bolas, Hopton Hall Gardens, Wirksworth, showed specimens of Cherry Late Duke (vote of thanks). Messrs. Veitch & Sons, Chelsea, exhibited twenty-seven dishes of Plums, representing that number of distinct varieties (silver medal). From the Society's garden, Chiswick, was also sent a collection of seventeen dishes of Plums. Messrs. Carter & Co., 237, High Holborn, sent neat even specimens of their New Model Onion, described as a cross between Rousham Park Hero and Magnum Bonum. Mr. R. Dean, Bedfont, sent two plants of Laxton's outdoor Tomatoes. From the Society's gardens came samples of the Dracæna-leaved Beet (Veitch), and Endive Queen of the Winter. Messrs. Lloyd, Lawrence & Co., 24, Worship Street, London, E.C., sent several samples of farm and garden tools, comprising seed drills and double wheel hoes.

Floral Committee.—Present—G. F. Wilson, Esq., in the chair, and Messrs. W. Wilks, J. Laing, H. Herbst, W. Goldring, J. Walker, B. Wynne, W. Wildsmith, W. Holmes, R. Dean, C. Noble, C. Pilcher, J. Dominy, H. Ballantine, H. M. Pollett, J. O'Brien, E. Hill, Shirley Hibberd, G. Duffield, and T. Baines.

Mr. Walton, Burnley, exhibited a collection of Ferns, amongst them being eight plants of Adiantum farleyense, which were said to have been raised from spores sown on February 23rd, 1887. They were taken from a large plant in the possession of E. Ecroyd, Esq., Edgend House, Burnley, Lancashire. In a note accompanying the plants it was stated that "the spores were only found after much searching, being in the overlapping pinnules of the frond. The first frond from the prothallus appeared some six months after sowing, the whole of the plants germinating being reared. The batch of plants should prove conclusively that Adiantum farleyense may be raised true from spores, when the spores can be obtained true from extra strong plants that have been isolated from any other Adiantum having any affinity to it." A vote of thanks was accorded for the plants, which were evidently the true A. farleyense, but the Committee expressed no opinion on the point to which attention was specially called in the letter. It has been claimed before that this Fern has been raised from spores, and the accuracy has been as frequently questioned by other Fern growers.

Mr. S. Ford, Leonardslee Gardens, Horsham, sent flower trusses of Nerine coruscans highly coloured. Messrs. Wm. Paul & Son, Waltham Cross, showed flowers of an H.P. Rose named Denmark, in the way of La France, of similar colour and fragrance; to be seen again.

Messrs. J. Veitch & Sons, Chelsea, exhibited plants of Amasonia calycina, Bouvardia President Cleveland, Amaryllis Autumn Beauty, Canna Ulrich Brunner, and Begonia John Heal (vote of thanks). All these are well proved plants of great merit, and they have been several times noted. Messrs. H. Cannell & Sons, Swanley, exhibited a collection of handsome single and double Tuberous Begonias, two of the latter being certificated, and votes of thanks were also awarded.

Mr. H. B. May, Upper Edmonton, contributed an extensive and handsome group of Ferns, representing about 200 species and varieties. All the plants were in excellent health (silver-gilt Banksian medal).

CERTIFICATED PLANTS.

Lælia porphyrites (Baron Schröder).—A supposed natural hybrid, a dwarf neat Orchid with medium size flowers, the sepals and petals tinged purple, the lip of an intensely rich crimson, and light in the throat.

Nepenthes Dicksoniana (J. Veitch & Sons).—A hybrid between N. Veitchi and N. Rafflesiana, named after the late Professor Dickson of Edinburgh. Pitchers large, long, green, beautifully mottled with crimson. A very handsome free variety.

Tuberous Begonia General Chichester (H. Cannell & Sons).—A double variety with large full deep rose coloured flowers of good shape.

Tuberous Begonia Mrs. Stark (H. Cannell & Sons).—A fine double yellow variety, blooms full and handsome.

Chrysanthemum Elsie (G. Stevens).—A beautiful creamy yellow variety, Japanese reflexed type, florets fluted and recurving.

Adiantum Waltoni diffusum (H. Walton, Brierfield, near Burnley).—A freely growing diffuse but graceful variety; a seedling from A. Waltoni, a so-called hybrid sent out in June, 1888.

Canna Ulrich Brunner (J. Veitch & Sons).—A very large flowered variety, deep rich scarlet, particularly showy and handsome.

NATIONAL APPLE AND PEAR CONFERENCE.

This Conference, which opens next week in the Royal Horticultural Society's Gardens at Chiswick, promises to be of great interest to fruit growers and of wide general importance. At a meeting of the Executive Committee held on Tuesday last, present: Dr. R. Hogg in the chair, and Messrs. A. H. Pearson, J. Walker, W. Wilks, H. J. Veitch, Wm. Paul, Shirley Hibberd, J. Douglas, W. Warren, J. Cheal, F. J. Lane, A. Dean, W. Wildsmith, J. Hudson, A. Turner, and J. Wright, the following arrangements were made:—The fruit, which will comprise selections from various districts, is to be staged early on Tuesday next, and the Conference will be opened by the Council of the Society at 3 P.M. On Wednesday papers will be read by Mr. G. Bunyard on the "Growth of Apples for Profit;" by Mr. William Paul on the "Growth of Pears for Profit;" by Mr. T. Francis Rivers on "Stocks for Apples and

Pears;" by Mr. W. Wildsmith on the "Fewest Varieties of Apples and Pears necessary to insure supplies of ripe fruit from August to March;" "Pruning Apple and Pear Trees," by Mr. Shirley Hibberd, Dr. Hogg being nominated to preside at the meeting. On Thursday the subjects are "Canker in Fruit Trees," by Mr. J. Douglas and Mr. E. Tonks; the "Enemies of the Apple and Pear," by Mr. J. Fraser; "Varieties of Apples for Sussex and their Culture in Heavy Clay Soils," by Mr. J. Cheal; "Renovation of Old and Formation of New Orchards in the Midlands," by Mr. W. Coleman; "Apples and Pears Suitable for Cultivation in Scotland," by Mr. M. Dunn, Mr. Shirley Hibberd presiding. On Friday the papers to be read are on "Compensation for Orchard Planting," by Mr. W. E. Bear; "Fruit Production and Distribution," by Mr. E. J. Baillie; "Railway Charges for Carriage," by Mr. D. Tallerman, Mr. T. B. Haywood being nominated to preside on the occasion. The meetings are to commence at 1.30 on each day, and discussions are expected to follow the reading of each paper. Visitors from the country who propose attending the meetings may be reminded that the Gardens are within five minutes' walk of the Acton Green station on the Metropolitan District Railway, and trains run in half an hour from the City stations every twenty minutes. Visitors from the south will find trains from Clapham Junction to Chiswick station, which is within a mile of the Gardens.

Notes & Gleanings

EVENTS OF THE WEEK.—To-day (Thursday) the Crystal Palace Hardy Fruit Show opens, and at 2 P.M. a Conference of Fruit Growers and a meeting of the British Fruit Growers' Association will be held. At 5.30 P.M. the Annual Dinner of the United Horticultural Benefit and Provident Society will be held in Cannon Street Hotel, Dr. R. Hogg presiding, and H. J. Veitch, Esq., in the vice-chair. The Crystal Palace Fruit Show will be continued on Friday and Saturday. A General Meeting of the National Chrysanthemum Society will be held at 7 P.M. on Monday, October 15th, in Anderton's Hotel, Fleet Street; E. Sanderson, Esq., in the chair. The National Apple and Pear Conference in the Royal Horticultural Society's Gardens, Chiswick, will be opened on Tuesday and continued until Friday, particulars of the programme being published on another page.

—— ROYAL HORTICULTURAL SOCIETY.—It has been decided to hold a Grand Horticultural Exhibition in the Temple Gardens on the Thames Embankment on or about the last week in May, 1889, the Benchers of the Temple having liberally given their consent for the Society to occupy the Gardens during two days for that purpose.

—— A PROSPECTUS before us shows that the business of MR. SAM DEARDS is being converted into a limited liability company, to be worked with a capital of £25,000 in shares of £1 each. The prospectus shows the various medals that have been awarded to the Victoria dry glazing and other of Mr. Deard's specialties, most or all of which have been from time to time described and illustrated in this Journal. Mr. Deards accepts the position of manager to the company on terms stated in the prospectus.

—— THE death of MR. DAVID WOOSTER at the age of sixty-four was recently announced as having taken place at Bayswater after an illness of over three years. Mr. Wooster was formerly associated with Loudon, whom he assisted in the compilation of several important works. A work on Alpine plants was also published by him, and for some years he was also associated with Sir Walter Trevelyan at Wallington.

—— SOME inquiries have reached us in respect to a HORTICULTURAL AND TECHNICAL COLLEGE for students in Kent. We are not in a position to give advice on this matter, as information essential for this purpose is not given in any prospectus we have seen. In a copy before us we find a tempting curriculum displayed, but we look in vain for names of proprietors, teachers, officers, or manager. Obviously on the character and ability of these, and the means at disposal, depend the stability and usefulness of a scholastic or collegiate institution, and until full particulars are furnished on these matters we are justified in regarding the scheme as speculative. At the same time we are convinced that knowledge cannot be bought at any college with which we are acquainted that will enable "students" to compete successfully with the leading gardeners, private or commercial, trained in establishments where actual work is conducted to a satisfactory issue.

—— EXTRAORDINARY ONIONS.—A correspondent sends the following note:—"At Mr. Deverill's Royal Seed Stores, Corn Hill, may now be seen two dozen of his new Onion, Ailsa Craig, probably the largest bulbs ever placed on an exhibition table, the largest of which girths 18 inches in circumference and weighs 2¼ lbs., less 1 ounce, the total weight of the twenty-four Onions being very nearly 47 lbs. Mr. Murray, the head gardener to the Marquis of Ailsa, Culzean Castle, is the grower, and after such a magnificent display we are sure the Oxfordshire growers of Onions will acknowledge that they do not stand alone in the production of fine Onions. We are assured that not for the last twenty-nine years has the like been seen in Banbury, and for the present Ayrshire is the premier county for Onions."

—— GARDENING APPOINTMENT.—Mr. William Maybury, late head gardener at The Rookery, Dorking, has been appointed head gardener to J. Godfrey, Esq., Brooke House, Sandwich, Kent.

—— AT the present time HELIANTHUS MULTIFLORUS RIGIDUS is one of the most showy plants in the borders. It has run up to a height of 7 feet, and its bright yellow flower heads are much prized for the decoration of tall vases when in a cut state.

—— SMALL plants of FUCHSIA PROCUMBENS covered with its crimson berries are very attractive and useful for draping the edges of the greenhouse or conservatory stages. It is a plant not often seen, but generally admired when well cultivated.

—— CUPHEA PLATYCENTRA is useful when planted in a mass in the flower garden. It is not often used now for embellishing beds and borders, but where it succeeds it is certain to meet with many admirers. Cuttings strike readily in the spring and rapidly grow into neat little bushes.

—— PRESENTATION TO MR. A. J. BROWN.—On Thursday last a public meeting was held in Lindfield, the object being to present Mr. A. J. Brown, who is retiring from the charge of the Finches Gardens, with a purse containing £8, as a mark of appreciation for the service he has rendered to the village during the nine years he has had charge of the gardens named. Mr. Brown is also local Secretary for the Gardeners' Orphan Fund.

—— A VERY fine example of TROPÆOLUM SPECIOSUM is growing at the base of a north wall of the Dairy, Highfield, Heckfield. The shoots of this season's growth measure 12 feet long. At the present time there there are many fine blooms upon it. The effect it produced some time since when covered with flowers can easily be imagined. Where this plant flourishes it is splendid, but how seldom do we see it in thoroughly good condition?—M.

—— LILIUM AURATUM AND ROSES.—Anyone wishing to improve the appearance of their Rose beds during September and early October, when there is a scarcity of blooms upon Hybrid Perpetual Roses, could not do better than plant bulbs of this Lily. Good bulbs are capable of producing stems carrying as many as ten and twelve large blooms the first year upon each. This form of after-decoration of the Rose beds does not in any way interfere with the welfare of the Roses.—E.

—— THE WEATHER IN LIMERICK.—An event without a parallel in the memory of anyone occurred on the morning of the 2nd, when I awoke to find 8° of frost. Dahlias, Heliotrope, Paris Daisies, Calceolarias, annuals in variety, French and Runner Beans, &c., were cut down to the ground. Geraniums were not much hurt, yellow Daisies not at all injured. The days since have been cold, rain falling frequently. Each night we have had from 2° to 6° of frost. Everything is cut down fully a month earlier this year. The swallows are still as plentiful as they were in the summer.—R. WELLER.

—— MESSRS. CASSELL & COMPANY send us a specimen with plate of a new serial publication they are issuing entitled "THE WORLD OF ADVENTURE," and ask our opinion thereon. The work, which is to be published monthly, is mainly intended for young people, and is to be "attractive in text and illustrations, and at the same time of an elevating character." The specimen copy, which consists of sixty-four pages of matter and illustrations, well fulfils these conditions, and the work will be interesting to, and no doubt read by, old as well as young. We commend this new serial to the attention of our readers.

—— TOM THUMB AGERATUM.—This is the best Ageratum that I know. The plants from which I have propagated my stock the last twelve or fourteen years were selected from seedlings raised from a packet of seed had under the above name, and during that period I have supplied friends with cuttings and plants of it. It is the admiration of

all who see it, and this is not to be wondered at, seeing that it is of dwarf and constant habit, a good grower and free flowerer, and the masses of colour, a beautiful grey, are very distinct and effective when contrasted with the surrounding masses of scarlet, yellow, pink, white, and blue. A few plants of this Ageratum should be potted at once. —H. W.

—— Heliotropes Miss Nightingale and White Lady.—Anyone in want of a good Heliotrope for bedding could not do better than procure the first named variety. It is of medium compact habit, the foliage and flowers being dark. For covering the back wall of a greenhouse to which is admitted a fair amount of light no better plant could be used than White Lady. Its growth is not too robust, while it flowers abundantly and the fragrance is especially pleasing. It is well to closely prune in the shoots to one or two eyes in the early spring of each year, or the branches are liable to become straggling and bare. Annual pruning of the shoots renders the succeeding growth free and neater in appearance.

—— Hale's Early Peach.—If anyone wants a good early companion for Bellegarde it will be found in Hale's Early. If the true form is obtained this will be found of fairly strong growth, and provided the district favours outdoor culture of Peaches, a sure bearer. It colours beautifully, usually ripens about the middle of August, and may be said to be of fairly good quality. This and other early varieties, notably Waterloo and Rivers' Early York ought to be most extensively grown in gardens where the late Peaches generally fail to ripen. Our collection of varieties on the open walls is somewhat limited, and I, and doubtless many others, would be glad to hear what has succeeded well in other gardens this season.—W. Iggulden.

—— Bellegarde Peach.—If limited to the cultivation of one variety of Peach, whether under glass or in the open, Bellegarde would be my choice. It possesses a good constitution without being too robust, sets well whether forced or otherwise ; the fruit are of good size, colours grandly if given fair play, while the quality is first class. It succeeds admirably on the open walls here, and even in such a season as we have nearly passed through all have ripened capitally. The fruits were certainly smaller than usual, but the colour was as good as ever, and good judges of fruit expressed the opinion that the quality surpassed anything tasted previously this season. In other words, Bellegarde ripened in the open was more pleasing to the palate than fruit ripened under glass with all its supposed advantages.

—— Ghent Azaleas.—These as well as the old Azalea pontica are lovely twice in the year—that is, when they are in flower and in autumn. Their bright crimson foliage is now most beautiful. The ordinary smoke of large towns does them no harm whatever. They are not really effective when planted on the dotting system with Rhododendrons and other evergreens, though they look well during the time they are in flower. When destitute of their foliage they have, from a distance, the objectionable appearance of looking like so many dead plants. This objection is overcome by planting them in masses instead of, say, alternately with evergreens, and with a good background of the latter they are shown to great advantage. They will grow well in any good loam where Rhododendrons thrive, but make more rapid growth if plenty of leaf soil is mixed with the loam.—W. D.

—— Mr. J. Mallender sends his usual Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for September 1888. Mean temperature of month, 53·1°. Maximum on the 2nd, 69·1° ; minimum on the 27th, 32·9°. Maximum in sun on the 14th, 126·4° ; minimum on the grass on the 26th, 28·2°. Mean temperature of the air at 9 A.M., 54·1°. Mean temperature of the soil 1 foot deep, 55·4°. Temperature fell below 32° on the grass on two nights. Total duration of sunshine in month, 101 hours, or 27 per cent. of possible duration. The brightest day was the 13th. We had two sunless days. Total rainfall, 0·91 inch. Rain fell fourteen days. Average velocity of wind, 6·1 miles per hour. Velocity did not exceed 400 miles on any day, and fell short of 100 miles on twelve days. Approximate averages for September—mean temperature, 55·8° ; sunshine, 108 hours ; rainfall, 2·51 inches. Cold, dry, fine, and very calm weather, and a good deal of haze and fog. The mean temperature of the past quarter is lower than any of the last thirteen years, and probably for a much longer period.

—— A Cold Week.—A daily paper says :—"The past week has been unusually cold in all districts, and in London the temperature of the six days, Monday to Saturday, was in every respect lower than that egistered during any similar period in the past sixteen years. The highest temperature of the week was only 54°, or 4° lower than the lowest previous maximum, and at least 10° lower than the maximum recorded in ten out of the sixteen years. In October, 1886, an unusually warm month, the thermometer on the 4th rose to 80°, or 26° higher than last week's maximum. As regards the night temperatures it appears that the actual minimum for the six days was also 4° lower than the lowest previously recorded, and strangely enough it was also at least 10° lower than in ten of the years in question. Although ground frost is not very unusual at this time of year, there is no previous instance of the thermometer in the screen falling as low as 32°. Last week, however, it did so on three occasions, and the mean of all the night readings was only 32·5, or about 2° lower than the average minimum for December and January."

—— The Weather in the North.—A fortnight ago, after the cold sunless season through which we have passed, there really did seem a promise of a few weeks bright and somewhat settled weather ; but alas ! our hopes were raised only to be disappointed, rain and fog soon followed, and on the night of the 1st October we were visited with 10° of frost. Of course, everything out of doors is now done for the season. Chrysanthemums, where not well protected, are cut down as badly as last year, when we were visited with 8° on September 28th, late varieties now, as then, suffering most. The difference in the hardiness of varieties is very marked, Peter the Great, Fair Maid of Guernsey, Boule de Neige I notice are particularly tender, while many others, particularly where the buds have been "taken" and the foliage become matured, have stood it much better. We have usually felt pretty secure here until about the second week in the present month, but our season of safety is apparently becoming shorter. We have gathered one small dish of Scarlet Runners only. Dwarf Beans have not even flowered, and Vegetable Marrows never grew larger than a very small pod of peas. Surely this is gardening under difficulties.—Wm. Jenkins, *Durham*.

—— The Weather and the Crops.—Mr. G. R. Allis writes from Old Warden, Biggleswade—"The sudden change in the weather on the 2nd inst. came as a surprise. The day throughout was heavily overcast, cold rain and sleet falling, with a very low temperature, the mercury of the thermometer only rising 5·42°, or 10° above freezing point. The mercury went down during the night to 24°, or 8° of frost. This was unusually severe for so early in the month, making sad havoc with vegetables —Kidney Beans, Peas, Marrows, Endive, outdoor Cucumbers, also Cauliflowers. Dahlias, Heliotropes, Asters, Sweet Peas, Zinnias, and a host of other things were completely spoiled. The same amount of frost occurred on the 13th October last year. The thermometer has registered frost on most nights since the 2nd from 5° to 7°, but the crowning frost of the season occurred on the morning of the 8th, the mercury falling to 22°, or 10° of frost. The market gardeners of the district have suffered in the loss of fine crops of Vegetable Marrows, field Cucumbers, and Runner Beans, and it is feared that a good breadth of Onion seed will have been spoiled that was late in coming to maturity ; but it will be some consolation to those whose crops of Potatoes showed such early signs of disease in the haulm to find, on lifting, much better results than could have been expected some weeks ago. The crops on light sandy soils are yielding fairly well, with but few diseased tubers."

—— An Amateur's House.—Mr. Edgar Newton has erected in his garden at Hitchin some houses with his "reform" system of glazing, which has been well described in the Journal. The first is span-roofed, about 30 feet long, with stages of corrugated iron on each side, and on these are shallow boxes 6 inches to 8 inches wide, containing plants of Tomatoes, which are grown on the single-stem plan to wires under the roof glass. They are heavily cropped with fine and richly coloured fruit. In another house a Black Hamburgh Vine is carrying a crop of Grapes, the bunches of good form, and the berries well finished in colour. He also grows Ferns and choice flowers for cutting and decoration. Trained to the back wall Maréchal Niel Rose and Zonal Pelargoniums are well grown, tall plants of the latter being always in flower. Shelves are provided near the glass for dwarf-growing and other plants, and the arrangement may be worth noting. A narrow strip of wood is placed edgeways the entire length on both sides, and the shelf has a gentle fall from the middle to the ends, where a hole is bored and a lead pipe fitted in to carry off the waste water. There is no drip on the plants beneath, and anyone can attend to the watering without getting at all wet.—T. G.

—— Birmingham Gardeners' Mutual Improvement Association.—The first meeting of the autumn session was held at the Midland Institute on Tuesday evening, October 2nd. The President, Sir Thomas Martineau, occupied the chair, and more than 100 members

were present. The President warmly congratulated the members upon the great success of the Society and the excellence of the programme for the autumn session. He likewise drew their attention to the valuable horticultural education such societies and meetings must be giving to the younger members of the profession. He remembered with very great pleasure presiding at the first meeting which was held to inaugurate that Society, inasmuch as it was one of the most useful and one of the most successful societies that sprang into existence during the three years of his mayoralty. At the close of his remarks Mr. R. Parker, The Gardens, Impney Hall, Droitwich, gave a most practical, instructive, and interesting paper on "Essential Points in Connection with the Successful Cultivation of our Hardy Fruits." He dealt with his subject in an exhaustive manner, dwelling upon the importance of a wise selection of stocks; of the value of a high, dry, and sheltered position, and a limited selection of such varieties as are suitable for the district in which they are to be grown. A lengthy discussion followed, which brought out much useful information, and a suggestion from Mr. A. Outram that a record should be kept in the library for the use of the members of such varieties that are known to do well in the district. A unanimous vote of thanks was tendered to Mr. Parker for his valuable paper, a similar vote being most enthusiastically tendered to Sir Thomas Martineau for presiding. The meeting then adjourned till October 16th.—J. H.

—— A FREE course of ten lectures on ELEMENTARY BOTANY AND THE PRINCIPLES OF GARDENING will be delivered in the Lecture Hall of the Mechanics' Institute, Woolton, Liverpool, on Thursday evenings, at 8 P.M., commencing on Thursday, October 11th, by R. J. Harvey Gibson, M.A., F.R.S.Ed., Lecturer on Botany in University College, Liverpool. The main object of the course will be to give an account of the structure and uses of the various parts of flowering plants, and the principles on which they are artificially cultivated. The origin of cultivated from wild plants, the diseases to which plants are liable, and the means adopted for the prevention and cure of such, will also be discussed. No scientific knowledge will be assumed, and the lecturer will aim at making the lectures as free from technicalities as is consistent with accuracy. A detailed syllabus will be distributed previous to each lecture, giving an abstract of the subjects considered therein. The lectures will be illustrated by magic lantern views, and, as far as possible, by actual specimens. The following is a detailed statement of the subjects of the individual lectures:—Lecture I. Animal and plant life, and the relation of plants to animals in nature. II. The general structure of the plant. The food of plants, and the method in which it is collected. III. The structure and uses of the various parts of the plants. IV. The structure and uses of the several parts of the flower, and the way in which they become altered to bring about cross-fertilisation. V. The origin and growth of the adult plant from the seed. VI. The means artificially adopted for improving and multiplying the plant. VII. The origin of cultivated from wild plants, illustrated by examples. VIII. Parasitic plants, how they live, and how they may be got rid of. IX. Carnivorous plants. X. The plants of the past, and their relation to the plants now existing on the earth.

SEASONABLE NOTES ON FLORISTS' FLOWERS.

AURICULAS.—Judging from what I have seen with others, and from my own small collection, this cold summer with its cloudy skies and low temperature has been favourable to the Auricula. The plants look sturdy, nor has there been so much autumn bloom as usual. There are some sorts which are more inclined to do this than others, but even with these I do not see so many autumn trusses. Where they do appear it is better at once to remove the pips if the stem has not risen much above the foliage, as there is less likelihood of the stem damping off and so, perhaps, injuring the plant; but if the stem has shot up to any height the top may be pinched off. All plants that have thrown these autumn flowers should be carefully watched, as the stem in decaying may injure the plant. For the same reason it will be necessary to remove all dead and decaying foliage from them, for there is nothing which is so injurious to the well-being of the Auricula as damp. The frames should be carefully gone over, and if there is any sign of green fly it should be at once got rid of. If not very numerous the application of a brush may be sufficient, only care should be taken to brush the under side of the leaves, and in so doing to hold the pot on one side so as not to allow the aphis to fall on the surface of the soil, for if they do they will inevitably soon crawl up to their old quarters. But perhaps the most effectual thing is fumigation; it does not hurt the plants in the least, and the smoke penetrates to every part of the plant. I at one time used to be afraid to use tobacco for this purpose, but I no longer fear it. As to woolly aphis, he has ceased to be the bugbear he used to be. It is not found to be injurious to the roots, but when it is found clustered round the collar of the plants it should be removed by the finger and thumb. When all these minutiæ have been attended to, and the frames have been well cleaned, and if necessary painted, the plants should be removed to their winter quarters, facing the south. Water must now be given sparingly, depending on the weather; if that is bright and sunny they will require it oftener than if it be dull and cloudy. Nor is it well to water all the plants indiscriminately; it will be seen which require it most, and it is better to take a little pains in this matter than to give an over-supply that may injure the plants. Air should be given whenever the weather is at all favourable, and when the nights become cold mats should be provided to cover them; but above all things avoid damp and drip from the lights. Treat the plants as hardy, but keep them from frost, not so much for the sake of the plants as for the bloom, which suffers from it.

CARNATIONS AND PICOTEES.—The season has been a peculiar one for these plants. My own small collection did very well, but the grass made growth so late, and the bloom was so late also, that the layering was postponed to a much later period than usual, it being far into September before even my small collection was finished. At the same time, the grass looks unusually healthy. It will now be time to take off such layers as are rooted. They should be either potted singly or in pairs; the compost used should be simply good loam, and a little coarse sand or grit to keep it open. The advantage of potting them thus is that when planted out the roots are very little disturbed, and growth goes on at once. Here too, as with the Auricula, damp is the chief enemy to be avoided. This causes spot on the leaves, and impedes the well-being of the plant. When potted they should be placed in a frame and kept close for a few days. They should then be removed to a frame or frames placed facing the south, and water should only be given when actually required. Air should be given on all suitable occasions, and indeed until frost sets in the frames may be kept open night and day. I may here say that I have had a most satisfactory bloom, and owing to the kindness of Mr. Douglas and Mr. Laken have been enabled to enjoy the sight of some of the newer varieties which I should otherwise have missed.

GLADIOLUS.—Towards the end of the month some of these may possibly be ready for lifting, although I do not think that there is need to be in a hurry about them. Some advocate the lifting of them when the foliage is quite green, but we do not do that with other bulbs, nor think it is advisable with these. The French growers say that November 5th is the proper time for lifting, and if they, with their drier autumns, think so, surely it ought to be much more so with us. There is, of course, a great difference even in our islands, and in late districts it may be necessary to loosen the roots by slightly raising them with a fork, but in the more southern parts this is not necessary. I have never had a finer bloom, although very late; and indeed have now, September 29th, a stand of twelve in my hall, with which I should not be afraid to enter the lists with any amateur, and I have had less signs of disease amongst them than I ever remember, so that, on the whole, I am inclined to think that they prefer a wet to a dry season. When they are taken up they should be carefully dried and put away in some place where frost cannot reach them.

PANSIES.—As I grow my small collection of these in pots I am now taking the old plants from the open, where they have been growing since the spring, and am dividing off and potting them for the winter. I find this to be, perhaps a lazy, but a good plan, sufficient for my purpose. Perhaps were I an exhibitor I should be more careful and strike them from cuttings, but plants treated as I do mine give me a beautiful bloom, and the flowers are as large as any I see at exhibitions. I grow none but Fancy varieties; indeed the old Show varieties seem pretty well elbowed out now, and for one Show there are fifty Fancies grown, and no wonder, they are so much more varied in colour and more robust.

RANUNCULUS.—The Persian varieties will only need to be looked over in order to see that there is no damp about them, which is very injurious to their well-being; indeed, if it gets at all a hold on them it is fatal, but it will be time in the early part of November to plant the Turban varieties, which are not so much grown as they ought to be. They will grow in any good garden soil provided it is not too heavy, and being perfectly hardy they give in early spring a large quantity of beautiful flowers.

TULIPS.—If the ground is in good order any time early in November is suitable for planting these bulbs. There seems to be a prospect of the revival of the fancy for them in the south. In the north they have always held their own, and I can remember when they were largely and well grown in the south. I remember going to see Groom's collection at Walworth, and those of amateurs at Sevenoaks and other places, but now, "None, alas! so poor as to do them reverence." Yet are they most gorgeous and beautiful flowers, and although a great fuss was made about them in former days, it is very questionable whether it was all necessary. There is one thing that intending growers should remember, that it is a mockery, delusion, and snare to look to Dutch growers for what we want. I had a collection from a very eminent Dutch firm, and I may safely say that there was hardly one amongst them that would come up to the requirements of an English fancier as what a rectified Tulip is—stained bases to the petals, the colours right down to the bottom, pointed and ill-shaped flowers were all too common, so that I have been trying to eliminate them ever since, the principal difficulty is to know where to buy them.

Of Roses and Chrysanthemums I have said nothing, because such ample directions are given from week to week in the Journal that it is unnecessary. Rose growers will now be in a wild state of excitement, making alterations, getting in new kinds, and clearing out those

which have been found wanting; indeed, altogether this is a busy time with the floriculturist. The fine weather we have lately had has been beneficial, but I fear it is not likely to last long now, therefore we must make use of every fine day that we can, and get through our work.—D., *Deal.*



FIG. 38.—RUDBECKIA PURPUREA.

RUDBECKIA PURPUREA.

A HANDSOME autumn-flowering Composite, which from its bold habit and large flower heads is most conspicuous in gardens either in separate beds or associated with other plants in borders. Masses, however, have a particularly good effect, and at Kew this season it has attracted considerable attention from visitors. The central florets are of a dark bronzy hue, the broad spreading or drooping rosy florets being of a purplish crimson colour, very distinct and quite a relief from the prevailing yellow shades amongst the autumn flowering Compositæ. It grows to the height of 3 or 4 feet, succeeds in deep well-drained soil, is quite hardy, and a perennial.

LATE PEAS.

SOWINGS of Telephone Peas which were made on the 15th of June last, and Ne Plus Ultra and Champion of England sown a week earlier

in drills 3 inches deep, from 8 to 10 feet apart, and running north and south, are now, as they have been for some weeks past, yielding abundant supplies of large, handsome, and well filled pods. The haulms were earthed and sticks supplied in due time, the supports being 6 feet high from the ground, and a good mulching of manure was then laid on each side of the ranks. Subsequently, owing to the weight of the crop, long Bean sticks were placed longitudinally on each side of the rows at 5 feet from the ground and secured to a series of upright sticks of a like thickness driven into the ground on each side, and with cross-ties made of tar string. These necessary supports have served a double purpose—namely, in the first instance in supporting the heavily laden haulms in an upright position, and now in supporting the no less heavily burdened haulms which overhang the longitudinal supports 3 or 4 feet on either side. This is the result of the wet season. The haulms have kept on growing from the time they started into growth. They are growing, flowering, and podding still, and will continue to do so until cut down by frost. Growers should note this.—H. W. WARD.

THE PEACH.

[A paper read by Mr. T. Francis Rivers at the meeting of the Horticultural Club, "Hotel Windsor," October 9th.]

THE origin of the Peach, like the origin of species, is so far removed from all our means of arriving at the truth that it is not necessary to make it a subject of discussion. It is sufficient to say that it is probable it was introduced into Europe from Asia about the time of the Emperor Augustus, and it was introduced into Greece by the Romans; the name Persica indicates the country from which the Peach is derived. It is said by some French authors that a variety of the Peach was grown in Southern Gaul at a very early period. There is, however, nothing remarkable in this fact, as the Mediterranean was traversed by Syrian mariners before Rome had attained to imperial power, and the seaport of Marseilles being a trading centre of great importance, there would be nothing strange in the fact of the introduction of Peaches from Syria into Gaul. We know of course that the relations of Syria and Persia had been very intimate from very ancient times, the Book of Esther showing that an important colony of Jews was established there. The transfer of the fruit in a dried form would account for its introduction into Palestine, and as the Peach varies almost more than any of our domestic fruits from seed, no doubt plenty of sorts came rapidly into general cultivation. To this day certain districts of Syria abound with Peaches and Nectarines. An old friend of my father sent him some years since some score or more of Peach trees which had been raised in the gardens near Aleppo. These were received with the native soil clinging to their roots; all these were seedlings, and bore fruit of different degrees of excellence, some being Nectarines of the Stanwick type, and some very good and sweet Peaches. A thirsty traveller would no doubt go into ecstasies about them, but when tested here in company with cultivated varieties they were good but of no particular excellence. The sweet kernel, which is a distinguishing characteristic, is of course of no consequence, as one would hardly crack a Peach stone with the teeth, and the labour of extracting the kernel with a hammer would not be repaid by the result.

There seems to have been an uneasy feeling among some of the ancient doctors that the Peach is not a wholesome fruit. I can understand that this theory was founded on something like a hard fact, for some of the seedling Syrian Peaches and Nectarines were so bitter as to be uneatable, and the strong flavour of prussic acid suggested their unwholesomeness; in fact, I should have been very sorry to have eaten one of these bitter fruits, a very slight taste was convincing. Assuming that Persia was the native home of the Peach, it seems to have spread both to the east and west with equal facility, for the Peach is so well established and so universal in China that its introduction through the Central Asian highways of commerce must have taken place at a very early period.

The Peach seems to have attracted popular attention in a singular degree in China. Its history has been wreathed with legends more or less interesting, and as it can be cultivated without the assistance of walls the Peach orchards when in flower are wonderfully attractive, the trees being laden with pink and white blossoms, which are used for decoration in the houses of the wealthy and luxurious Chinese. It is not abundant enough here to be used as a decorative flower, but there is no doubt if it could be gathered from trees as children gather May, it would soon become popular. In the "Leaves from my Chinese Scrapbook," by Frederick Henry Balfour, it is stated that three sorts of Peach trees are grown by Chinese gardeners—the dwarf, the shrub and the full sized trees, of these the dwarf is the most highly prized for the beauty and perfume. Of its blossoms which are remarkable for their size and colour, and are divided by Chinese florists in eighteen different species. Some of these are the varieties which electrified the gardening world when introduced by Robert Fortune. As they are not hardy enough to be grown in the open air they have not retained their original popularity.

The shrub grows to the height of 4 or 5 feet, is common in the Imperial gardens, where it is planted on the margins of pools and acclivities of rockwork, which form a prominent feature in Chinese artificial landscapes. This is, of course, our flowering Peach. If our climate were not so cold in the spring there is no doubt the Peach would be a popular ornamental flowering tree, but a biting east wind does not conduce to the admiration of any out-of-doors product; but I can quite understand the delicious effects given to the early spring in China by the abundant and delicate colouring of this pretty tree. One of the Chinese historians has described in glowing language the delight of seeing the villages connected by gigantic wreaths of Peach trees, dotting the plains as far as the eye can reach.

The third sort is the full-sized tree, and is cultivated for the fruit, which I have always heard is handsome and poor in flavour. There is much diversity in the shapes and colours of these fruits, some being spherical, and one variety a curiously oblate spheroid, which we call the flat Peach of China, and which is no value except as a curiosity. The Peach is said to have been established upwards of 2000 years in China (this is a very moderate estimate of Chinese time), and was presented to the Emperor Wu-Ti of the Han dynasty by foreign ambassadors. It was held in so much esteem that the fruit or plants formed part of the tribute paid to the Imperial government by foreign nations. It is also one of the emblems of longevity and marriage:

> "When the Peach tree flowers,
> The bride with order rules."

Here, I think, where the Tarragon grows, the grey mare is the better horse. A Peach garden was the scene of one of the most celebrated events in Chinese history, where the oath of brotherhood was taken by the three heroes who played so important a part in the historical romance of the "Three Kingdoms." There are many interesting details connected with the Peach in Chinese literature, to which it is not necessary to refer. The Chinese gardeners have an infallible receipt for the destruction of the insects which infest the Peach. This is a cold decoction of pig's head, poured on the trunk and into the roots, and they also say the best manure for the trees is snow. From China many of the Peach trees in Australia were derived. Residents, however, say that the Peaches are woolly and insipid, and always full of grubs.

The Peach appears to have been known in England in the eleventh and twelfth centuries, as we read that King John died of a surfeit of Peaches and new wine at Swineshead Abbey. It is very probable that it was known to King Alfred, as his tutor resided for some time at the Court of Charlemagne, who was a cultivator and admirer of the Peach. It is recorded by French historians that he ordered a list to be compiled of the varieties grown in his garden. In the seventeenth century the fruit appears to be very generally cultivated, as both Philip Miller and Batty Langley, early in the eighteenth century, give lists of some forty or fifty varieties, many of the sorts named being still familiar to English fruit gardens.

No English historian will ever be able to point with pride to his native villages being wreathed with Peach orchards, but there seems little doubt that before many years have elapsed the railways will be lined with glass houses, under whose sheltering protection more good Peaches will be grown than either Chinese or American orchards have ever produced. No fruit suffers so much from bad cultivation and over-production as the Peach. Excessive cropping means loss of flavour, and good cultivators need never fear competition. A bad Peach is only fit for pigs. The fruit has no economic value in the sense of the Apple and the Plum. As a preserve it is not equal to the Plum, and it cannot be stored for future consumption like the Apple. In this country it must therefore be a fruit of luxury, requiring skill and capital for its cultivation, which must be carried on either on walls or in glass houses. Very uncertain crops are, however, obtained from unprotected walls in our climate, and my own experience has been gained for the last thirty years from glass houses, during which period I may say that I have never known a failure.

When the cultivation of Peaches in pots was systematised it became possible to test the several varieties, both of the Continent and of England, which had been hitherto known by name only, and a collection was formed, including as many distinct varieties as it was possible to obtain. I remember being much interested by the precocity of some of the sorts, the "Avant Pêche Rouge" and the "Double de Troyes" being ripe in the middle of July, the "Early Anne," dedicated to the memory of Mrs. Anne Dunch, ripening at the end of the month

Although of little value as fruits, I thought they might prove valuable in imparting precocity to the later and better Peaches, and being young and curious I amused myself by mixing the pollen of the early and midseason varieties, preserving and sowing the stones of the fruit so treated. When the first batch of seedlings fruited, consisting of some two or three hundred trees, my father and myself were much interested in observing the curious diversity exhibited. Whether or no the mixture of the varieties caused this divergence, the appearance of early Peaches was at once an established fact, and in rapid succession came the "Early Beatriee," "Early Louise," "Early Rivers," giving an abundance of fruit in the orchard house during July, a month hitherto barren of any but worthless sorts. With the advent of the "Stanwick" Nectarine an entirely new race, both of Nectarines and Peaches, was created, the rich flavour and size of the Syrian fruit imparting a totally different quality to the progeny of the ordinary Peaches and Nectarines, and to this mixture I owe the Lord Napier Nectarine, for although this was raised from a Peach, there is no doubt but that it inherited the Stanwick blood. Most of the seedlings raised from this race have vigorous growth and deep green sickle-shaped leaves.

In 1874 I received from Messrs. Capps & Son of Mount Pulaski, Illinois, two Peaches which they affirmed were the earliest to ripen in the United States; these Peaches were the Alexander and Amsden June. I confess that I was entirely incredulous, but I had the plants potted, and in due time they produced and ripened fruit; to my great pleasure it matured in a cold orchard house six days before the Early Beatrice. The Alexander, although slightly clinging to the stone, is a Peach of high quality in every sense; but the Amsden June, ripe almost on the same day, is slightly bitter and a clingstone. I did not think it necessary to cultivate two varieties so closely allied, and I preferred the Alexander. I see, however, that on the Continent the Amsden June is selected as being the superior. I cannot help thinking that in some cases the two varieties have become changed, a very easy matter, as they are so much alike. Alexander, Waterloo, and Hale's Early are three very valuable early Peaches, and very distinct; the foliage of all is easily distinguished by the expert, the leaves being very bright and lanceolate, and the wood deep in colour. Although the Alexander and Waterloo are earlier than the Early Beatrice and Early Louise, yet the hardiness and fertility of these two English sorts will always keep them in general cultivation. I am almost inclined to think that the Early Beatrice, if grown in the open air after protection during the spring, would give a reasonable profit. I have seen it ripen on neglected bushes in the last week in July out of doors, the colour of the fruit being so bright that I thought some Poppies had been overlooked.

The midseason Peaches are of course well known to all gardeners. The great tribes or races are the Noblesse, Grosse Mignonne, Galande, and Madeleine. From these types hundreds of varieties appear to have been raised from seed and named. The Noblesse is probably derived from the Madeleine Blanche, and reproduces itself frequently from seed. The Grosse Mignonne is one of the most popular Peaches in France Under this name André Leroy enumerates no less than fifty-seven synonyms. There is no doubt that is one of the most excellent of Peaches. According to this French author it has two centuries of existence. La Quintinye, in 1680, declares that the Mignonne is the finest Peach in cultivation, very large, velvety and round, melting and exquisite, but sometimes flat and insipid, a fault from which no Peach is entirely free under certain conditions of soil and culture. In England this Peach has obtained so much popular favour that it is encumbered with synonyms. There is no doubt that it is worthy of the extended cultivation it has received, and it is to be regretted that the season of ripening cannot be enlarged; the multitude of seedlings which have been raised from it have not, however, produced this desirable result. The Early Grosse Mignonne ripens sometimes in advance, and the Belle Bauce or Mignonne Tardive somewhat later, but the few days of difference are not of any great importance. There is a variety, said to be Grosse Mignonne, with small flowers, which I understand is sometimes sold by continental growers. This is a false Mignonne; the true Grosse Mignonne has large, clear brilliant flowers, and the leaves have globose glands.

The Galande is another distinct race of Peaches, which is also encumbered with synonyms both in England and France. It is distinguished from the Grosse Mignonne by the intensity of the colour of the fruit. When exposed to the sun in a warm season the skin becomes almost black, and one of its synonyms is Noire de Montreuil. It is perhaps hardier than the Grosse Mignonne, and for this reason it is cultivated very extensively in the Peach gardens of Montreuil, and is the principal market Peach. The flavour of the fruit, when thoroughly ripe, is very good, but visitors to Paris sometimes complain that the price is excessive, and that a franc a piece for hard and dry fruit is too much, the fact being that they are gathered long before they are ripe. The flowers of the Galande are invariably small. The Madeleine Rouge is the prototype of our popular Royal George, which again seems to be the sport of name-givers. The English sort under this name is so well established that it can be easily identified. The flowers are small, and the leaves serrated. The fruit is of the highest quality, but the excessive tendency to mildew renders this sort difficult to cultivate, as there appears no remedy for this disease. The Red Magdalen and Madeleine de Courson, which seem to have been very mixed with the Royal George, have large flowers and are glandless. I am responsible for the introduction of many varieties of Peaches, but I cannot say that I have ever studied the interest of the wall cultivators. Wall cultivation, unless in certain very favoured districts, appeared to me to be a weary waste of labour, and my object has always been to provide the orchard house with fruit from day to day, ranging from July to the end of September, after which date no reasonable man need desire Peaches or Nectarines.

In September after the Royal George we have the Barrington, claimed by the French as a synonym of the Chancellor; the Walburton Admirable, which is evidently a seedling from the Noblesse; the Late Admirable, which is also claimed by French pomologists as a synonym of the Bourdin. The orchard house has, I am glad to say, introduced a new race of late Peaches; these are—Princess of Wales, Lady Palmerston, Golden Eagle, the Nectarine, Sea Eagle, Gladstone, and Osprey, all of which fruits in the orchard house properly grown are far superior to the Late Admirable, Chancellor, Gregory's Late, Desse Tardive, or any other so-called October Peaches. There is a variety of the Peach which has never been very popular in England, but which is used in the south of France for stewing; this is the Pavie, the fruit being large and heavy, with tough and tasteless flesh, and a skin as disagreeable to the touch as cotton velvet. This is the Melacoton of the Spanish (Anglicé, Cotton Apples). In the soft Provençal tongue it is Mirecoton, or Mirlecoton, and in the United States, where the fruit seems to be popular, it is ingeniously transformed into Malagatune. If these Peaches could be grown out of doors like Pears or Apples they might make a pleasant addition to the dinner table, but they are not worth either the time or cost of glass or wall culture.

Since the introduction of the Stanwick Nectarine a great advance has taken place in this smooth-skinned brother of the Peach. Some few years since the Elruge and Violette Hâtive were the principal sorts grown, we have now a more extended range. These ordinary varieties of Nectarines, unless very skilfully and exceptionally grown, are small and insipid. The green-fleshed sorts have not been considered as equal in flavour to the orange-fleshed kinds. I think, however, this is no longer the case, the intermixture of the Stanwick race having imparted a quality of flesh differing completely from the older sorts. This is exemplified by the Victoria Nectarine, which was raised by my father, and is the result of a cross between the Violette Hâtive and the Stanwick. This is a very delicious and distinct Nectarine, but it ripens too late for walls in our climate, and must, therefore, be grown under glass to be enjoyed in perfection. The early sort, Lord Napier, I believe inherits the Stanwick blood, although it came from a Peach. This Nectarine begins a series of fruits which last through August and September, divided into two distinct types, the orange-fleshed and the green-fleshed. There are now many important varieties of the former, and I venture to say that the better known they are the more popular they will become, the principal sorts being the Rivers' Orange, the Pitmaston, Humboldt, and Pine Apple. These ripen generally in the order in which they are placed. The most decided success of late years in seedling Nectarines is the Lord Napier, ripening fully ten days in advance of the Hunt's Tawny, a Nectarine valued for its precocity, but otherwise of no merit. In Peaches and Nectarines, as in all other fruits, I hope we shall cease to place a fictitious value upon varieties because they happen to be old and historical. It will be much better, both for ourselves and for others, if we can improve the standard of flavour and merit. This can only be done by the judicious raising of seedling fruits. I have tried with varying success for many years, but considerable improvement is still desirable both in early and late Peaches. The failure of flavour attributed to the latter, however, appears to me to result from the fact that the tree, unless kept in a gentle warmth, is unable to complete the ripening. For this reason I think that the late sorts should be grown in a house devoted especially to them, so that the necessary heat should be applied. This continual heat is injurious to those sorts which have ripened their fruits

and desire rest. As late Peaches have a high value in the market, the extra expense is fully repaid to the cultivator.

The various methods of cultivating the Peach would require another paper, which I hope may be furnished at another meeting. The subject will be one of great interest and value, as I venture to think that we are still only on the threshold of Peach cultivation in this country.



RESTORING ROSES TO HEALTH.

My recent remarks were directed to Roses grown in pots and planted out that were subjected to early forcing. I never attempted recruiting unhealthy plants outside, when once they are thrown out. I should do the same with unhealthy forced plants. If they are left until they are too far gone, it is useless to attempt to do anything with them. But the strain of forcing will in time weaken plants, and if they are operated upon as soon as they display signs of exhaustion, fresh soil and a year's rest will often restore them to health and vigour.

SPORTS.

It is pretty clear, I think, that some Roses are much more liable to sport than others, the same as many other plants. Merveille de Lyon was in the market before I noticed it produced on a plant of Baroness Rothschild. For several years this plant has continued to yield flowers of both varieties. One half of the plant has flowers of the former and the other flowers of the latter. Both are beautiful Roses, and would be more highly appreciated if they possessed fragrance. Scentless Roses ought to be discarded, they are no better than Camellias.

ROSE THE BRIDE.

The Bride is a stronger grower than Niphetos, and in some respects a fuller and better Rose. In growth and the construction of its flowers it closely resembles its parent, Catherine Mermet. The greater number of petals in the flower than Niphetos possesses is in favour of its lasting longer, but the flowers have not the pure whiteness of Niphetos. The greenish tint, however, is not objectionable in either wreaths or bouquets. We have lately had occasion to use it for these purposes, and good full flowers are lovely. It will never supersede Niphetos in my opinion for market purposes, for although it is a stronger grower it does not flower so profusely; in fact it possesses the character of its parent in this respect in a marked degree.

ROSE HER MAJESTY.

This seems to be a shy bloomer. I have only two or three plants, but they have not yet produced a single bloom. They have grown strongly this year, and were the first in the garden to be attacked by mildew. I had hopes, judging from its thick leathery foliage and robust growth, that it would have been proof against this parasite.—W. B.

DRESSING ROSE BLOOMS FOR EXHIBITION.

Mr. W. R. Raillem, page 287, has not referred to this matter too soon, and certainly his dispassionate method of treatment is most commendable. The question cropped up a short time since at the last Show of the Royal Irish Horticultural Society at Dublin, and the blooms shown by Messrs. Dickson of Newtownards were sought to have their size and beauty minimised by saying they were "dressed." A distinguished amateur hearing this buzzed about took my arm and said, "Come, Murphy, let us see how Dickson's Roses are said to have been spoiled." We went carefully through them—two forty-eight stands, I think—to see how many would wear the unnatural contorted appearance we heard of, but except Madame Eugénie Verdier, and if I remember right, Caroline Durden, not one seemed otherwise than they might have been cut off the stem, and those two would be passed except you were searching for evidence. But is not the dressing of Carnations, Dahlias, Chrysanthemums, &c., permissible, especially in a bad season?—W. J. Murphy, *Clonmel.*

RECOLLECTIONS OF ROSEBANK.

Rosebank is the residence of E. Mawley, Esq., the well-known and popular junior Secretary of the National Rose Association. Arriving from Euston at Berkhamsted, and having passed the interesting remains of its once renowned castle, a house appears reproducing the well-known Croydon wonders of wind and rain-gauge, while the grounds are full of other gauges of various mysterious meteorological appliances. There is no such private observatory in the kingdom, but what is more to the point there is no such highly scientific scene of Rose-growing, and desire to inspect this strongly added to the claims of friendship. Here are 1000 Roses in the highest state of cultivation. A field of half an acre contains them, excepting a few Teas on a south wall in the adjoining garden. It is divided into two parts by a lawn tennis court, and has narrow strips of turf between the long narrow beds. These contain two rows of thirty-five each, this arrangement being better than any other for getting easily at each plant, all Rose bushes, and in a high state of excellence, the wood for next season being strong and robust.

The Teas, about 200 in number, were even finer than the H.P., and perhaps the most striking of all were a few high-class Teas on 3-feet standards. They were but one year old, and the heads come larger than is mostly attained in three years. I am still of opinion the standards are not sufficiently used nowadays, and the finest blooms of all come from maiden standards. The cold wet season, though fatal to Mr. Mawley's hopes up to June of very first-rate exhibition blooms, has done wonders for the growth of his Maréchal Niels against walls, which give the highest promise for next year. Side by side with these were two W. A. Richardsons as large and bushy as if they had been Gloire de Dijons, although quite young plants.

It was interesting to hear that Mr. Mawley considers Ulrich Brunner as the best H.P. It is so good all round—colour, size, magnificent growth, handsome foliage, and freedom from mildew. Her Majesty in this latter respect appears rather the opposite. The Tea beds, on Mr. George Paul's system, were considerably above the level in the middle. On herbaceous borders and giant Chrysanthemums coming on I may not enter, as Mr. Story says:—

> "For, O my Rose, my frank, free-hearted,
> My perfect above all conscious arts,
> What are others beside thee? O Rose, my darling!
> To thee I have given my heart of hearts!"

—A. C.

ROSE GLOIRE DE DIJON.

This is once more asserting itself as one of the finest autumn blooming Roses in existence. During September very fine blooms were obtainable both from plants from walls and also in the open border. It is largely used by cottagers in many districts for training up the front of their houses. It is one of the few varieties of Roses which will thrive and flower on a northern aspect.—M.

THE MANETTI STOCK.

If it should be of any interest to record the opinion of another Rose-grower, who has also exhibited, on the question of Manetti as a stock for Roses, I should like to say ditto to Mr. Pemberton, on page 312. Olivier Delhomme, a very beautiful Rose, is, on Manetti, an impossibility.—T. W. Girdlestone.

It is, I think, quite possible that Mr. Murphy saw many thousands of old Roses on the above stock when visiting the home of the celebrated North of Ireland Rose at Newtownards recently. The last time I visited the nursery there was in August, 1886. There was then an enormous quantity of old Roses carrying such massive blooms as I have never before or since seen except in the Messrs. Dickson's stands at the Dublin Exhibitions. That the soil at Newtownards is peculiarly adapted to the Manetti stock no one who has seen the Roses there can deny. Here, however, they will not thrive; we have tried them in every fertiliser, and always with the same result—failure. Those on the Briar do exceedingly well. Two years ago we produced a hundred of each. More than two-thirds of those on the Manetti are gone over to the great majority, while of those on the Briar there are but eleven dead. Soil, I believe, has a great deal to do with Roses as regards success or failure on the different stocks. In the neighbourhood of Clonmel magnificent Roses will be found in their season growing on the Manetti stock. On one occasion when in that locality I saw some in Mr. Murphy's collection that would have been highly creditable in the stand of cut blooms from any professional Rose grower. Doubtless Mr. Murphy will inform Mr. Gilmour the size of the blooms I saw, also the age of the plants, as I ascertained neither of these facts.—R. Weller.

I had no intention of embarking in a controversy on this subject, and may say I quietly stood aside until my name was brought prominently forward by two writers in your Journal. Mr. Duncan Gilmour, jun., is evidently determined to give the Manetti no quarter, and to strengthen his arguments quotes from page 20, "Rosarian's Year Book, 1888," that I favour the Briar cutting, but he altogether ignores what I wrote about the Manetti, page 19. If Mr. Gilmour cannot grow Roses on Manetti others do. How can he get over the fact that two of the most celebrated amateur exhibitors (I refer to Mr. R. N. G. Baker and Mr. Jowitt), year after year contested for the championship (during that time no one could approach them) with Roses grown on Manetti? The former gentleman, writing in 1879, says that all the blooms he exhibited that year were grown on cut-back plants on Manetti, most of which were five years old. Probably if Mr. Baker had any Teas in his stands they were cut from Briar stocks, but singular enough this year Mr. Baker again wins the champion trophy, and this time there was not a single Tea Rose in his forty-eight. Perhaps he will kindly tell us where he had those splendid blooms from, Manetti or Briar? I once had the pleasure of spending a few days with Mr. Jowitt at the Old Weir, Hereford, at a time when he was heads and tails with Mr. Baker as to who should be first; his Roses were all on Manetti, and many of them three or four years old, and splendid they were. Again, an ex-amateur champion wrote me last spring, that the strongest plants he had in his garden are "old" ones on Manetti. It is no argument to say then they must be on their own roots. Does that in any way damage the value of the stock on which they were budded? The secret of success is by careful study to find out the most suitable stock for the various kinds of Roses. As a rule, all the strong-growing Hybrid Perpetuals, Moss, and summer Roses, also those of robust habit, such as Baroness Rothschild, Merveille de Lyon, &c., &c.,

do first-rate on Manetti, yet for choice I prefer the Briar cutting to seedling Briar, Manetti, or any other stock, as I have never found it fail me whatever kind is worked on it. Mr. Gilmour is wrong in supposing nurserymen have no quantity of plants excepting maidens. I have something like 4 acres of them ranging from two to eight years old, from which I cut many thousands of blooms every morning during the summer months, and very many are used at the early shows before the maidens are in flower.—BENJAMIN R. CANT.

I DO not desire to continue the discussion on this subject further than to ask your permission to point out to Mr. D. Gilmour that when he says, "I could go on pitching in the Manetti over several sheets" (261), and my reply (287), that "I am sure any reader who has been a student of his racy style and fertile imagination will take this readily for granted," *does* hear another interpretation besides that of impugning his veracity. I meant to write in the same good-humoured vein as he did; and you must permit me to say I extremely regret if I have annoyed him, as he seems to think I have made "insinuations" against him. As to his queries about my "limited" number of Roses, I have already answered them by anticipation; and as I mean to lift them within the next few days I shall know how the roots grow, or from whence they come—none on the Manetti after eight years is dead. The soil is a strong limestone loam; Messrs. Dickson's seems much lighter.—W. J. MURPHY, *Clonmel*.

A TWIN ROSE.

I ENCLOSE a double Rose bud, two flowers on one hep. I am aware that there is nothing very unusual in it in itself, but it is remarkable as springing from a shoot of the striped sport mentioned in No. 2083, and from the same portion of the plant as produced the pink sport, and would seem to point out an inherent tendency in the strain to vary in every possible way—colour, growth, shape, and strength.—DUCKWING.

[It is an example of fasciation, two buds and stalks having become combined in an early stage.]

FIXED TEMPERATURES FOR VINES.

MR. YOUNG said, "We have no fixed temperature, but work by the 'feel' of the pipes, which are kept comfortably warm." I said on page 260 that I agreed with him. For years I have worked on the principle that he advocates, but I have invariably found that young men took a good deal of drilling before they could thoroughly grasp the matter and carry it out properly. Once this is mastered—and it should be done by the dullest pupil in a week—it is the easiest and safest method of maintaining the necessary temperatures for conducting forcing operations under glass. I do not believe that one man in a hundred would have a desire to return to the keeping of his houses at fixed temperatures after he has once been thoroughly initiated into regulating the temperature by external conditions. "Fixed" temperatures result from breathing upon the thermometer and other kinds of deception before the chief enters, so that the mercury shall be "right" whether the house is or not. Even in following what we may call a natural system, it is necessary to have a stated temperature, especially for the guidance of the inexperienced; but in doing so a wide margin should be given, often 15°, in the night temperature. But it is needless to fix temperatures for the inside unless they are arranged to allow for variations externally For instance, if we wanted a house, say 55°, it would be maintained at that temperature if the thermometer stood at freezing point outside; and if it continued to fall, the temperature inside would be allowed to fall to 50°. If it stood 45° to 50° outside, it would be madness to try to keep any structure at 55°. On such occasions the pipes would be kept gently warm, even if the house stood at 70°.

This is the principle upon which I have worked, and I have found it to be more satisfactory than trying to keep the temperatures at a fixed degree, whether mild or the reverse, without the slightest deviation being permitted. I nearly killed a house of Odontoglossums once by trying to keep it at 45° where the thermometer was hanging. Three parts of the house was at freezing point. Most of the plants took two years to recover, and some died. It taught me a lesson I have never forgotten. The maintenance of fixed temperatures was one of the mysteries of gardening for many years, and it will be a long time before it is obsolete.—WM. BARDNEY.

CATERPILLARS IN THE PAST SEASON.

COMMENTING upon a circular on the caterpillar pest, which has just been issued by the Agricultural Department, a daily contemporary refers at some length to the subject in an article from which the following remarks are extracted:—

The past season, apart from the drawback of continuous cold and wet, was disastrous to fruit growers, owing to the swarms of caterpillars which attacked their orchards. Apples, Pears, Plums and Filberts were rapidly stripped of leaves, so that no sight was more common during the summer than to see trees almost bare of leaf, instead of being covered with blossom or with fruit. When the flower buds and the young leaves began to expand, legions of caterpillars—little, light, unsightly things—seized on them, until in a few days many of the usually prosperous plantations in parts of Kent, Hereford, Worcester, and other counties, looked as if a siroeco had passed over the country, scorching every green thing in its course. The result was, of course, a scanty crop in the blighted districts; and (what is quite as serious) the trees, it is feared, have been affected, so far as their bearing powers are concerned, for next season. The reason is plain. The caterpillars which worked such woe were the larvæ of various small moths, which are already laying their eggs, and will in the second generation multiply a hundredfold, if their numbers are not diminished either by man, or birds, or the weather. The two latter contingencies are not to be depended on, so that the farmer and fruit grower must now bestir themselves to put in force the preventives which lie ready to their hand. But in doing so regard must be had to the habits of the caterpillars, or rather of the moths of which they are the intermediate stages. The chief offender was the Winter Moth, though the Pale Brindled Beauty, the Mottled Umber, and a few other species with a similar life-history shared in the mischief. As the females of these moths are practically wingless, they must remain not far from the spots where they have passed their chrysalis, the mummy or cocoon-like stage, and hard by the trees upon which they live during their caterpillar existence. There was, however, a second group of moths busily at work all summer, or spring, which must be checked in their costly career by means in accordance with their habits. The Lackey Moth, one of the pests of Oaks, Elms, and Beeches, and especially of Apple trees, the Ermine Moth, and the Figure-of-eight Moth, are types of this section of the orchard owners' enemies, though they were not quite so destructive as the first-named group. The females of the second group of moths can fly, and some of them lay their eggs upon the twigs and spurs of fruit trees, where they remain until spring.

In the case of the Lackey Moth, the Entomologist of the Agricultural Department tells us that its caterpillars change to chrysalids under rubbish, grass, and clods near the fruit trees they have injured. Accordingly, to limit the family, it is necessary to destroy the progeny in these quarters, by brushing off the grass and weeds under the trees, and raking up and burning all rubbish. Lime and other caustic materials might also be usefully applied to the surface, as the chrysalids do not burrow deep in the soil; while a preliminary digging and hoeing in cultivated ground, before the liming is put into practice, is likely to render the process even more efficacious. To throw finely powdered quicklime into the trees in winter during a damp fog, when there is just sufficient moisture to hold the lime up on every part of the twigs and spurs, might also be useful. This treatment applies excellently to mossy Apple trees, as it destroys the lichenous growth, which looks so picturesque and poetical, but in reality harbours all kinds of insects. It is nevertheless clear, owing to the free flight of the female of this group of moths, that it is more difficult to provide preventives against their raids than to apply remedial agents after they have begun work. But when the fruit grower has to deal with the first group his task becomes easier, and the results more certain. The moths being wingless and their habits therefore less wayward, all that is needful is to destroy them in the caterpillar condition, which terminates towards the end of October, by digging the ground around the trees, and applying lime and other caustic substances. Again, the female moths may be prevented from ascending the Apple and other trees, for the purpose of laying their eggs, by tying round the trunks and branches bands of cloth or ropes of hay dipped in tar or smeared with cart grease, or with one of the various compositions sold for the purpose. Oil cake or manure bags dipped in a mixture of softsoap, paraffin oil, or carbolic acid, in any of its various forms, are even better. In the United States and Canada—where for many years past the various State and Provincial Governments have bestowed much more attention on these matters than we have—girdles made of tin and stout line, well smeared with these substances, are fastened round the stems. Drenching the ground under the trees with water having paraffin oil in it, or applying strong liquid manure, dressings of quicklime, gas lime or soot, at some distance from the trunk, are the most approved modes of killing the chrysalids before the perfect insect emerges from them.

In fruit plantations it is also possible to get at the chrysalids by digging all round the trees in October, working in at the same time lime, soot and other substances of a like disagreeable character. This is especially necessary in the case of Filbert and Cobnut trees, round which it is not always practicable to place guards. Such trees, when badly attacked by the Winter Moth, should not be pruned until January, after the eggs have been deposited, and then the lopped-off branches should be burnt. At the same time the loose bark of Apple trees should be removed, and the stems brushed with softsoap, paraffin, or carbolic soap—a treatment equally applicable to Pear and Plum trees. In the circular nothing is even hinted at regarding the services which birds render to the fruit grower in keeping in check the insects which so seriously diminish his profits. It was, indeed, loudly affirmed this year that the wholesale destruction of sparrows by the Wirral and other farmers' clubs had not a little to do with the extraordinary increase of the other winged creatures. This, so far as sparrows are concerned, is, we think, a mistake. There is no doubt that in towns, where the sparrow—a graminivorous bird—cannot procure more appropriate food, it destroys aphides, cockchafers, and the like. Yet there is no denying the allegation that this bird is an indifferent friend of the farmer; and unquestionably, for every caterpillar it might devour in an orchard, it would ruin a large quantity of fruit. The Buff-tip Moth caterpillar is easily shaken from the Lime tree in showers; and in Germany, especially when the caterpillar is torpid in early morning, it is found that it is easy for three people to clear fifteen trees in a few hours of Pine Sawfly larvæ by simply jarring the branches. The small Ermine Moth caterpillars can also be easily shaken to the ground, and then dispatched; and cockchafers are sometimes shaken down, when they are speedily disposed of by pigs and poultry. The most effectual means, however,

of getting rid of all these insect pests is to prevent them from laying. This can be accomplished by smearing the bark with train oil, softsoap, or other disagreeable substances; though we fear that this, like a great many other preventives, is not, on the whole, so readily useful in large as in small orchards.

FLOWER GARDEN NOTES.

Zonal Pelargoniums. — Frosts have greatly crippled the more tender bedding plants, and in many instances the work of breaking up the beds has already commenced. Although enough cuttings apparently have been struck to meet all the requirements of the garden, many of these may be lost during the winter, and it is advisable in this case, and imperative in others where an insufficiency of cuttings have been rooted, to lift and store a number of old plants. There are various makeshift ways of storing them, dry rooms, outhouses, and even cellars being utilised for the purpose. The surest method of wintering a sufficiency is to pack a number of plants closely together in either well drained boxes or in large pots, or they may be placed singly in small pots, the choicer varieties most needing this treatment. In any case the plants should be forked out of the ground, no attempt being made to preserve a ball of soil with the roots. Pick off the greater portion of the old leaves, shorten the roots considerably, and pack or pot firmly in any common soil. They may be stored in a dry light soil, the shelves or staging of an empty vinery answering well, while those in pots may be set on greenhouse or other shelves. Dry pits and frames, rooms, and outhouses may also be utilised for storing the plants. Give no water at first, and only sufficient subsequently to prevent shrivelling. A little frost such as benefits the fruit trees will not hurt them, but they must be protected from severe frosts.

Tuberous Begonias.—These stood through a frost surprisingly well, only those in a low-lying position being crippled. Soon after frosts have disfigured them these Begonias ought to be carefully lifted with a small ball of soil and roots, and be packed closely in boxes of light and only slightly moist soil. They may be set in dry sheds or rooms, or in dry cool houses, pits, or frames, no water being given, and according as the tops die these must be removed, or the decay may spread to the tubers. Damp and frost are the greatest enemies to be feared, and much fire heat is injurious, causing premature growth. Autumn-struck cuttings and late-raised seedlings will all form small bulbs or tubers, and these should be gradually dried and kept cool and dry till the spring.

Dahlias.—When the frost spoils these they ought soon to be cut down to within 8 inches of the ground, and the roots at once lifted. The greater portion of the soil should be cleared from the tubers, and the plants be then stored in a shed stems downwards to dry. Before the tubers shrivel they ought to be packed closely in a single layer in boxes and well covered with nearly dry soil, or they may be set on the floor or bench of a dry shed and covered with soil. All they require is to be kept cool, dry, and protected from severe frosts. The commoner varieties, including the old Constance or White Cactus and the singles, generally have the most robust constitutions, and these may frequently be safely wintered in the open. If well established in a rather dry position all that is necessary is to cut them down to near the ground, and then well mound over with ashes or coeoa-nut fibre refuse. If a severe frost reaches the collar of a Dahlia this usually proves fatal, and for this reason either lifting or protecting must not long be deferred after the top is crippled.

Cannas.—The strong clumps of these ought to be lifted directly the foliage is spoilt by frost, and may be wintered as easily as Dahlias. Some of the soil of the beds should be left on the roots, and after being dried somewhat, all may be set closely together in a shed or cool cellar and lightly covered with nearly dry soil. Warm, moist, and darkened cellars are unsuitable, but answer admirably when plenty of light and air can be admitted in all but frosty weather. In warm localities where the subsoil is of a gravelly nature, or in dry positions near shrubberies, Cannas may be left undisturbed and protected with a mound of ashes; but, as a rule, the safest course is to lift and store where frost or much damp cannot reach them.

Salvia patens and Verbena venosa.—The former has done remarkably well this season, and in most years is very effective in the centre of large beds and also in mixed and ribbon borders. It is tuberous-rooted, and ought to be cut down, carefully forked out of the ground, and after being dried somewhat, be closely packed in boxes of soil and kept either in a house where drip cannot reach the soil, or in pits or frames. Kept on the dry side, only enough water being given to keep the tubers plump, and protected from severe frosts, every plant will push up numerous cuttings next spring, and which may easily be struck in gentle heat. Verbena venosa is fairly showy, very serviceable, and easily wintered and propagated. It forms long fleshy roots, and the old stems with these attached should be forked out of the ground and closely packed in shallow boxes of common soil. Even loose roots may be similarly treated, and all will keep fresh and plump in a pit or frame. Every short piece of root with one or two points may be converted into a plant next spring.

Herbaceous Lobelias.—These also have been very beautiful, a mass in the centre of a bed being most effective. The old stems may be shortened down, the plants forked out of the ground, and either potted or packed in boxes of soil. Being wintered in a cool house, frame, or pit, very little water being given, all will push up numerous young growths or suckers, and a larger stock of plants obtained by division.

Succulents.—A severe frost has caught a few of the choicest Sempervivums and Echeverias, but all have been lifted and stored for the winter. They require rather small pots or very little sandy soil to root in; must be kept very dry, and any decaying portions be cut out as often as necessary. A damp position, drip, and frost, prove fatal to them, and they ought therefore to be wintered, where possible, on dry shelves or staging in slightly heated houses. The common Echeveria secunda glauca may be very closely packed together in frames and protected from severe frosts, or in boxes in houses or frames. A large number may frequently be safely wintered packed facing outwards in a mound or bank of soil against a dry sheltered wall, being protected from snow and frosts with the aid of garden mats or other coverings. Sometimes they are bunched up like ropes of Onions and suspended in cool vineries or other houses, where they keep alive till it is safe to put them out in the spring.—W. I.

NOTES FROM GUNNERSBURY HOUSE.

The well known gardens attached to the residence of H. J. Atkinson, Esq., at Acton, have long been noted for good management in every department, no one hobby being allowed to interfere with the well-being of others. Health, luxuriance, and cleanliness are conspicuous throughout, and it would be difficult to find in so limited a space gardening, in its many forms, so thoroughly carried out as it is at the above named place. The well-stocked kitchen garden, vineries that maintain a constant supply of highly finished Grapes, pleasure grounds abounding in choice and beautiful shrubs and delightful views, have frequently been fully described in the Journal, while the fine specimens of stove and greenhouse plants, which a few years since were exhibited by Mr. Hudson, will be remembered by many as the victors in numerous hard won fights. Large specimens are not grown now, but a good stock of Palms, Dracænas, Crotons, &c., of a suitable size for decorative purposes is still kept. The work of propagation going on continuously, and the excellent condition of the plants, unmistakeably indicate that they are in the hands of one who thoroughly understands their culture from the cutting to the specimen plant. My object in penning these brief notes is to draw particular attention to the exceptionally fine Chrysanthemums I had the honour of inspecting early in September, the majority of the plants being grown on the large-bloom system, three shoots to each plant, and although not grown for exhibition, many an intending competitor at the Chrysanthemum shows would contemplate the coming struggle with equanimity if he possessed such plants as these. They are tall, vigorous, and clothed to the rim of the pots with deep green leathery foliage, the wood being wonderfully hard and well ripened for such a season as we have passed through. This satisfactory state of ripeness in the wood is, I believe, due in a great measure to the fact that the plants are in smaller pots than they are usually met with; indeed it is quite a marvel how such large and vigorous plants could be kept in so healthy a state in the limited amount of root room allowed. The largest pots are only 9 inches in diameter, and yet I did not notice a single unhealthy leaf in the whole collection, which was one that any Chrysanthemum grower might be justly proud of.—H. Dunkin.

LOBELIA PUMILA MAGNIFICA.

This is one of the best Lobelias that I am acquainted with. It is a good grower, of compact habit, and produces flowers of a rich blue in great profusion. Therefore it should have a place in every garden where masses of distinct colours are employed. But, owing to the plant being such a profuse flowerer difficulty is experienced in procuring the necessary complement of cuttings in the autumn, and on this account a dozen or two plants should be taken up at once with a little soil adhering to the roots. Shorten the latter back to the soil and cut the flowering shoots down to within a couple of inches of their bases before the plants are potted. Employ 4½-inch pots and a mixture of four parts light sandy loam and one of sweet leaf mould, the soil being made moderately firm about the roots. Place the plants in a frame or pit out of the reach of frost or excessive damp, water through a rose to settle the soil, and keep the plants close for a week or ten days until the roots have pushed into the fresh soil, when plenty of fresh air should be admitted on all favourable occasions. Keep them also on the dry side at the roots to prevent the plants starting into growth before being required for propagation in the spring. They should then be put in heat near to the glass to induce the plants making a sturdy growth, from which to strike sufficient plants for furnishing early in summer the number of beds allotted to it in the flower garden. The plants when put into heat should be kept moist at the roots.—H. W.

THE PROGRESS OF BOTANY.

(*Continued from page 309.*)

THE DARWINIAN THEORY.

This leads me to touch on the great theory which we owe to Mr. Darwin. That theory, I need hardly say, was not merely a theory of descent. This had suggested itself to naturalists in the way I have indicated long before. What Mr. Darwin did was to show how by perfectly natural causes the separation of living organisms into races which at once resemble and yet differ from one another so profoundly came

about. Heredity explains the resemblance; Mr. Darwin's great discovery was that variation worked upon by natural selection explained the difference. That explanation seems to me to gather strength every day, and to continually reveal itself as a more and more efficient solvent of the problems which present themselves to the student of natural history. At the same time, I am far from claiming for it the authority of a scientific creed, or even the degree of certainty which is possessed by some of the laws of astronomy. I only affirm that as a theory it has proved itself a potent and invaluable instrument of research. It is an immensely valuable induction; but it has not yet reached such a position of certitude as has been attained by the law of gravitation; and I have myself, in the field of botany, felt bound to protest against conclusions being drawn deductively from it without being subjected to the test of experimental verification. This attitude of mine, which I believe I share with most naturalists, must not, however, be mistaken for one of doubt. Of doubt as to the validity of Mr. Darwin's views I have none: I shall continue to have none till I come across facts which suggest doubt. But that is a different position from one of absolute certitude. It is therefore without any dissatisfaction that I observe that many competent persons have, while accepting Mr. Darwin's theory, set themselves to criticise various parts of it. But I must confess that I am disposed to share the opinion expressed by Mr. Huxley, that these criticisms really rest on a want of a thorough comprehension.

Mr. Romanes has put forward a view which deserves the attention due to the speculations of a man of singular subtlety and dialectic skill. He has startled us with the paradox that Mr. Darwin did not, after all, put forth, as I conceive it was his own impression he did, a theory of the origin of species, but only of adaptations. And inasmuch as Mr. Romanes is of opinion that specific differences are not adaptive, while those of genera are, it follows that Mr. Darwin only really accounted for the origin of the latter, while for an explanation of the former we must look to Mr. Romanes himself. For my part, however, I am altogether unable to accept the premises, and therefore fail to reach the conclusion. Specific differences, as we find them in plants, are for the most part indubitably adaptive, while the distinctive characters of genera and of higher groups are rarely so. Let anyone take the numerous species of some well-characterised English genus—for example, Ranunculus; he will find that one species is distinguished by having creeping stems, one by a tuberous root, one by floating leaves, another by drawn-out submerged ones, and so on. But each possesses those common characters which enables the botanist almost at a glance, notwithstanding the adaptive disguise, to refer them to the common genus Ranunculus. It seems to me quite easy to see, in fact, why specific characters should be usually adaptive, and generic not so. Species of any large genus must, from the nature of things, find themselves exposed to anything rather than uniform conditions. They must acquire, therefore, as the very condition of their existence, those adaptive characters which the necessities of their life demand. But this rarely affects those marks of affinity which still indicate their original common origin. No doubt these were themselves once adaptive, but they have long been overlaid by newer and more urgent modifications. Still, Nature is ever conservative, and these reminiscences of a bygone history persist; significant to the systematic botanist as telling an unmistakeable family story, but far removed from the stress of a struggle in which they no longer are called upon to bear their part.

Another episode in the Darwinian theory is, however, likely to occupy our attention for some time to come. The biological world now looks to Prof. Weismann as occupying the most prominent position in the field of speculation. His theory of the continuity of the germ-plasm has been put before English readers with extreme lucidity by Prof. Moseley. That theory, I am free to confess, I do not find it easy to grasp clearly in all its concrete details. At any rate, my own studies do not furnish me with sufficient data for criticising them in any adequate way. It is, however, bound up with another theory—the non-inheritance of acquired characters—which is more open to general discussion. If with Weismann we accept this principle, it cannot be doubted that the burden thrown on natural selection is enormously increased. But I do not see that the theory of natural selection itself is in any way impaired in consequence.

The question, however, is, Are we to accept the principle? It appears to me that it is entirely a matter of evidence. It is proverbially difficult to prove a negative. In the analogous case of the inheritance of accidental mutilations, Mr. Darwin contents himself with observing that we should be "cautious in denying it." Still, I believe that, though a great deal of pains has been devoted to the matter, there is no case in which it has been satisfactorily proved that a character acquired by an organism has been transmitted to its descendants; and there is, of course, an enormous bulk of evidence the other way.

The consideration of this point has given rise to what has been called the new Lamarckism. Now, Lamarck accounted for the evolution of organic Nature by two principles—the tendency to progressive advancement and the force of external circumstances. The first of these principles appears to me, like Nägeli's internal modifying force, to be simply substituting a name for a thing. Lamarck, like many other people before him, thought that the higher organisms were derived from others lower in the scale, and he explained this by saying that they had a tendency to be so derived. This appears to me much as if we explained the movement of a train from London to Bath by attributing it to a tendency to locomotion. Mr. Darwin lifted the whole matter out of the field of mere transcendental speculation by the theory of natural selection, a perfectly intelligible mechanism by which the result might be brought about. Science will always prefer a material *modus operandi* to anything so vague as the action of a tendency.

Lamarck's second principle deserves much more serious consideration. To be perfectly fair, we must strip it of the crude illustrations with which he hampered it. To suggest that a bird became web-footed by persistently stretching the skin between its toes, or that the neck of a giraffe was elongated in the perpetual attempt to reach the foliage of trees, seems almost repugnant to common sense. But the idea that changes in climate and food—*i.e.*, in the conditions of nutrition generally—may have some slow but direct influence on the organism, seems, on a superficial view, so plausible that the mind is very prone to accept it. Mr. Darwin has himself frankly admitted that he thought he had not attached sufficient weight to the direct action of the environment. Yet it is extremely difficult to obtain satisfactory evidence of effects produced in this way. Hoffmann experimented with much pains on plants, and the results were negative. And Mr. Darwin confessed that Hoffmann's paper had "staggered" him.

Organic evolution still, therefore, seems to me to be explained in the simplest way as the result of variation controlled by natural selection. Now, both these factors are perfectly intelligible things. Variation is a mere matter of everyday observation, and the struggle for existence, which is the cause of which natural selection is the effect, is equally so. If we state in a parallel form the Lamarckian theory, it amounts to a tendency controlled by external forces. It appears to me that there is no satisfactory basis of fact for either factor. The practical superiority of the Darwinian over the Lamarckian theory is, as a working hypothesis, immeasurable.

The new Lamarckian school, if I understand their views correctly, seek to re-introduce Lamarck's "tendency." The fact has been admitted by Mr. Darwin himself that variation is not illimitable. No one, in fact has ever contended that any type can be reached from any point. For example, as Weismann puts it, "Under the most favourable circumstances a bird can never become transformed into a mammal." It is deduced from this that variation takes places in a fixed direction only, and this is assumed to be due to an innate law of development, or, as Weismann has termed it, a "phyletic vital force." But the introduction of any such directive agency is superfluous, because the limitation of variability is a necessary consequence of the physical constitution of the varying organism.

It is supposed however, by many people that a necessary part of Mr. Darwin's theory is the explanation of the phenomenon of variation itself. But really this is not more reasonable than to demand that it should explain gravitation or the source of solar energy. The investigation of any of these phenomena is a matter of first-rate importance. But the cause of variation is perfectly independent of the results that flow from it when subordinated to natural selection.

VARIATION IN PLANTS.

Though it is difficult to establish the fact that external causes promote variation directly, it is worth considering whether they may not do so indirectly. Weismann, like Lamarck before him, has pointed out, as others have also done, the remarkable persistence of the plants and animals of Egypt; and the evidence of this is now even stronger. We at Kew owe to the kindness of Dr. Schweinfurth a collection of specimens of plants from Egyptian tombs, which are said to be as much as 4000 years old. They are still perfectly identifiable, and, as one of my predecessors in this chair has pointed out, they differ in no respect from their living representatives in Egypt at this day. The explanation which Lamarck gave of this fact "may well," says Sir Charles Lyell, "lay claim to our admiration." He attributed it, in effect, to the persistence of the physical geography, temperature, and other natural conditions. The explanation seems to me adequate. The plants and animals, we

may fairly assume, were 4000 years ago as accurately adjusted to the conditions in which they then existed as the fact of their persistence in the country shows that they must be now. Any deviation from the type that existed then would either therefore be disadvantageous or indifferent. In the former case it would be speedily eliminated, in the latter it would be swamped by cross-breeding. But we know that if seeds of these plants were introduced into our gardens we should soon detect varieties amongst their progeny. Long observation upon plants under cultivation has always disposed me to think that a change of external conditions actually stimulated variation, and so gave natural selection wider play and a better chance of re-establishing the adaptation of the organism to them. Weismann explains the remarkable fact that organisms may for thousands of years reproduce themselves unchanged by the principle of the persistence of the germ-plasm. Yet it seems hard to believe that the germ-plasm, while enshrined in the individual whose race it is to perpetuate, and nourished at its expense, can be wholly indifferent to all its fortunes. It may be so, but in that case it would be very unlike other living elements of organised beings.

I am bound, however, to confess that I am not wholly satisfied with the data for the discussion of this question which practical horticulture supplies. That the contents of our gardens do exhibit the results of variation in a most astonishing degree no one will dispute. But for scientific purposes any exact account of the treatment under which these variations have occurred is unfortunately usually wanting. A great deal of the most striking variation is undoubtedly due to wide crossing, and these cases must, of course, be eliminated when the object is to test the independent variation of the germ-plasm. Hoffmann, whose experiments I have already referred to, doubts whether plants do as a matter of fact vary more under cultivation than in their native home and under natural conditions. It would be very interesting if this could be tested by the concerted efforts of two cultivators, say, for example, in Egypt and in England. Let some annual plant be selected, native of the former country, and let its seed be transmitted to the latter. Then let each cultivator select any variations that arise in regard to some given character; set to work, in fact, exactly as any gardener would who wanted to "improve" the plant, but on a preconcerted plan. A comparison of the success which each obtained would be a measure of the effect of the change of the environment on variability. If it proved that, as Hoffmann supposed, the change of conditions did not affect what we may call the rate of variation, then, as Mr. Darwin remarks in writing to Prof. Semper, "the astonishing variations of almost all cultivated plants must be due to selection and breeding from the varying individuals. 'This idea,' he continues, 'crossed my mind many years ago, but I was afraid to publish it, as I thought that people would say, 'How he does exaggerate the importance of selection.'" From an independent consideration of the subject I also find my mind somewhat shaken about it. Yet I feel disposed to say with Mr. Darwin, "I still must believe that changed conditions give the impulse to variability, but that they act in most cases in a very indirect manner."

(To be continued.)



HARDY FRUIT GARDEN.

Taking Stock.—Now is the best time to take stock of all the fruit trees and bushes growing in various positions in order to determine which are worth keeping and which are not. In some instances the varieties do not merit the space given up to them, in others the trees are become unprofitable, and might well be replaced by young ones, while there are numerous cases where there is much valuable wall space not sufficiently utilised for fruit culture. It is not always wise to uproot large trees, of inferior varieties of Apples and Pears especially, the better plan being to regraft these with others that are worthy of culture. Nor should any unhealthy or unfruitful trees of good varieties be too hastily destroyed, as it is quite possible to restore such to good health and free bearing order long before young trees could be grown into a profitable size. As a rule Apples and Pears remain in good health much longer than either Cherries, Plums, Peaches, and Apricots, and although these may be preserved in a profitable state for many years if liberally treated at the roots, it is yet advisable to have a few younger trees coming on to take the place of those no longer worthy of preservation. Especially is this necessary in the case of Peaches, Nectarines, and Apricots, any of these being liable to die off rapidly, and that, too, in spite of various remedial measures resorted to. Gooseberries and Currants are also liable to lose large limbs, and young bushes ought to be in readiness to take their place. Raspberries, although not much addicted to dying off suddenly, will not go on doing well in one position for many years, and there are numerous gardens where inferior varieties are still tolerated. All the walls and fruit quarters should, therefore, be looked over and a final decision arrived at.

Preparing for Planting.—Advantage should be taken of a fine dry time to prepare the sites for fresh trees, whether these be against walls or in the open. Not only can this be well done at this early date, but an early preparation allows better time for the deeply moved ground to settle before the time for moving the trees arrives. Not unfrequently the trees are prepared only a short time before the trees are planted, and unless allowance is made for the sure settlement of the soil the "collars" are bound to sink below the ordinary level of the garden or border, and this leads to excessively deep root action and a marked deterioration in the health of the trees. When the sites are prepared early, trees brought from the nurseries may, weather permitting, be planted directly they are received; this, seeing that in many instances they have already been long out of the soil, being another important consideration. Where whole quarters are to be newly planted the preparation of these should consist of bastard trenching or double digging, first, however, seeing that the drainage is in good working order, as fruit trees will not long thrive on badly drained land. It is not advisable to mix much rich manure with either the bottom or top spits. The trees will usually grow vigorously on fresh land, and manure added may cause gross unfruitful growth, while if deeply buried it inevitably encourages undesirable deep root action. Trees do exceptionally well in fresh loamy soils, or any in which plenty of turfy loam has been added, and this is far preferable to planting in heavily manured land. When manure is most needed is after the trees have exhausted much of the natural fertility of the soil and have arrived at a good free bearing condition. Given freely then and they will long remain in a profitable state. Trees planted in holes only a trifle wider than the spread of roots seldom grow away very satisfactorily, and where solitary trees are set out holes not less than 4 feet in diameter should be prepared for them.

Refilling Old Sites.—It is simply a waste of time and money to replant orchard ground that for many years has been occupied by fruit trees. Better by far break up a fresh piece of ground, as on this the trees, if properly attended to, rarely fail to do well, whereas any planted on soil already exhausted of all the food fruit trees most need, will seldom attain a serviceable size. The case is somewhat different in the enclosed kitchen and fruit gardens, where manure is used plentifully for the various crops of vegetables, in addition, perhaps, to liberal mulchings of manure given to the fruit trees. In very many instances, however, the wall borders in which trees have long been established are much impoverished below the surface and against the foot of the walls, and much of this poor soil ought to be changed for the best loamy soil procurable before young trees are put out in the place of worn-out old ones. The least that can be done is substitute fresh garden soil for that which has long supported fruit trees, and a liberal addition of ground bones is most beneficial in all cases. In low lying or badly drained positions each site for all choice fruit trees may well have a separate small pipe drain leading from it to the nearest main drain, one of which ought to be found under most of the principal walks near the walls. Such drains ought to be nearly or quite 3 feet deep, as, should they be placed much nearer the surface, the drainage may be too perfect, more moisture being sucked from the soil than is good for the trees to lose. A quantity of loose stones placed in the bottom of the holes will not long keep the roots from finding their way into cold clayey soil underneath, though they may assist in the drainage. On all heavy soils rather high planting should be practised, and this completed with good surface culture will serve to keep the roots nearer the surface.

The Fruit Room.—Every season the fruit room ought to have a thorough overhauling and a good cleansing given. The walls ought to be whitewashed and all the woodwork scrubbed down, the aim being to make the room as sweet as possible. Apples, and in a lesser degree Pears also, are very porous, and the flavour is easily tainted in a musty atmosphere or from contact with anything scented in any way. Nothing in the shape of hay or straw should be permitted in the fruit room, and the fruit ought either to be stored on the clean boards or on fresh "kitchen" paper.

FRUIT FORCING.

Peaches and Nectarines.—*Planting Young Trees.*—The border must be efficiently drained, the base having an incline to the drain, which should be formed of 3 or 4 inch tiles having proper fall and outlet. It is not desirable to concrete the base unless it be wet or when the subsoil is loose and likely to encourage the roots to enter it. Some ordinary gravel mixed with a third of lime formed into a mortar-like consistence and put in 3 or 4 inches thick, will form a suitable base. The surface of the concrete must incline to the drain, which should be laid in a hollow over the concrete. Use clean drainage—viz., a layer of brickbats not much less than half-brick size, another of smaller, and so on to the top layer of the size of ordinary broken road metal, and if covered with a layer of the siftings of old mortar rubbish about 3 inches thick, the drainage altogether being 12 inches thick, it will be a most satisfactory and substantial affair. The old mortar rubbish should be free from pieces of wood, using that remaining or not passing through a three-quarter-inch sieve. Good loam is the only suitable soil, the top 3 or 4 inches of a pasture with its turf. Add if inclined to be light a

fourth of clay marl finely divided, if very strong add a fourth of road scrapings. A small quantity (a twentietb) of crushed steamed bones may be added, and a similar proportion of wood ashes, chalk or old mortar rubbish freed of laths or other pieces of wood, to the extent of not less than a tenth. Ordinary loam will answer, but we prefer the turfy. In the case of ordinary garden soil, add the other ingredients according to the nature of the soil, and a fiftb part of fresh stable manure free, as far as possible, of the straw; the materials to be well incorporated and in a fairly dry state, put together firmly. 24 inches depth is ample, and for ordinary sized trees 3 feet wide to begin with, or for tree two or three years trained to walls 4 feet 6 inches. Plant rather high, as the soil will settle and tbe surface dressings will raise the soil correspondingly. The earlier the trees are planted after the leaves show indications of falling the better, as fresh rootlets are produced at once. Supply water after planting, allow it to soak in, and when dry enough firm well and mulch with 2 or 3 inches thickness of short rather fresh manure. For early forcing confine the roots to inside, but in successional and late houses these roots may have to run of inside and outside borders.

For very early forcing Alexander Peach may be employed. There is no companion Nectarine, Advance is the earliest. For early houses —Hale's Early, Early Grosse Mignonne, A Bec, and Dr. Hogg, with Lord Napier Nectarine. Second early—Royal George, or its better form Stirling Castle, Grosse Mignonne, or Belle Bauce, and Alexandra (Noblesse), with Elruge, Violette Hâtive, and Rivers' Orange Nectarines. Succession houses.—The preceding are eligible with Bellegarde and Barrington Peaches, Dymond being excellent; and in addition to the Nectarines named above, White and Pineapple. Late houses—Barrington, Princess of Wales, Walburton Admirable, and Sea Eagle Peaches, with Pineapple and Victoria Nectarines.

Earliest House.—The trees are now leafless. If any pruning be necessary attend to it; but due regard having been paid to disbudding, preventing overcrowding, and removing the useless growths after the fruits were gathered very little will now be necessary. The trees should be dressed with an insecticide before tying them to the trellis. The borders may be pointed, the loose surface soil removed, and fresh loam added, with 20 per cent. of steamed bonemeal and a similar per-centage of wood ashes. The roof lights may remain off until November, when it will be necessary to replace them to ward off heavy rains and probably snow, air being freely admitted except during frost. Allow the outside borders of early houses to have the benefit of whatever rains may fall in October, afterwards protect with leaves and litter over it, with shutters or tarpaulin later on to throw off the wet.

Trees Started at the New Year.—Tbe foliage is falling, but it comes off tardily, an indication that the wood is not so well solidified and matured as obtains with forced trees generally, yet the buds are plump and there is nothing to fear in respect of immaturity. Clear away the leaves as they fall, and when all are down lose no time in having the house thoroughly cleaned, the trees pruned and dressed and tied to the trellis, top-dressing the border as before advised unless the trees have been lifted or root-pruned this season, when it will not, of course, be necessary.

Succession Houses.—The foliage in these is quite green. The growths, however, are tolerably firm, and the buds appearing well in the axils of the leaves. The frosts have not affected the foliage (though 7° were registered on the 3rd inst.), and there is no indication of the foliage ripening. In the case of young trees it will be advisable, particularly where there is a tendency to late growth, to form a trench at a distance from the stem equal to about one-third the heigbt of the trees, detaching all the roots, leaving the trench open for ten days or a fortnight, when it may be filled firmly. This will check the tendency to a late growth, and contribute to the maturity of the wood and buds. Care must be taken not to allow the soil to become dry in the part undisturbed, and detaching the roots will encourage the production of fresh rootlets, which will decidedly benefit the setting and stoning of the fruit in the ensuing season.

Late Houses.—The wood which has borne fruit may be cut out and thinned where too crowded. The house may be kept rather close by day when there is sun, throwing the house open at night, which will assist the wood to ripen, and concentrate the tree's energies on maturing the buds through the increased power of elaboration and assimilation by day, with rest at night. With a gentle warmth in the pipes in dull weather the ripening process will be still further enhanced, but it must be accompanied by a free circulation of air.

Late Unheated Houses.—In these structures a great change bas been effected during last month, the fruit ripening very well, indeed it has been the best of the season. Bellegarde and Barrington have been excellent. We gathered the last of Barrington the same day (October 3rd) as the first fruit of Sea Eagle were gathered. The last is a grand fruit, pale straw colour, with a pink cheek, the flesh dissolving, with a rich racy flavour. It also fruits freely, and is remarkably free from disease, possessing an excellent constitution. There is nothing like it in Peaches except Early Rivers, which is one of the richest flavoured of the very early Peaches, and both were raised from the Early Silver Peach.

PLANT HOUSES.

Allamandas.—Withhold water from the earliest plants until they flag, for it is only by so doing that they can be brought to rest in moist heated structures. This can be done without allowing the wood to shrivel. Partially prune the plants, and when growth has been thoroughly brought to a standstill the plants will quickly go to rest in a temperature of 55° provided the soil is kept rather dry at their roots until they have cast the whole of their foliage, when they may be kept perfectly dry. Supply weak stimulants to plants that are expected to flower for the next two or three months. To insure a continuous supply of flowers the plants must be kept growing, and to accomplish this the temperature should range from 60° to 65° at night.

Bougainvilleas.—Plants that have completed their growth should be induced to rest by placing them in a temperature of 55° where a drier atmosphere can be maintained. Gradually diminish the supply of water until their leaves have fallen, when they may be kept perfectly dry. Plants that bave not yet completed tbeir growth may have all small shoots removed, so that light and air can penetrate to ripen the main growths. This is essential if a good supply of flowers another year is to he obtained.

Clerodendrons.—Cuttings of C. fragrans that have recently been rooted may be placed into 4-inch pots, and if grown close to the glass and fully exposed to the sun they will produce serviceable beads of bloom. A few plants of C. fallax may be placed into the stove, and if they have been properly grown they will not be long before they are in full flower. Supply the whole of these plants with weak stimulants, but keep the remainder of the stock in a night temperature of 55° to 60°; they will more slowly forward in this temperature and form a capital succession.

Tydæas.—Place these in a light position as close to the glass as possible. This is important with late flowering varieties, or they will become tall. The early flowering varieties may be placed into the stove or an intermediate structure. Supply water freely to their roots, but be careful tbat it does not fall upon their foliage.

Gesneras.—Weak stimulants will benefit plants that have filled their pots witb roots, and be careful that they do not suffer by an insufficient supply of water at their roots. They should occupy a shelf if possible where a moderate amount of humidity is maintained in the atmosphere. Water must not be allowed to settle upon their foliage, or it will soon present a rusty appearance. To do these well they must not be kept in a lower temperature than 60° to 65° at night until they are in full bloom.

Caladiums.—Be careful not to dry them suddenly or their tubers will perish. Keep them in the stove until the whole of their foliage has died, when they may be kept perfectly dry. Once they reach this stage they will be safe in a temperature of 50°, provided the soil is kept perfectly dry. C. argyrites should still be encouraged to grow, for its beautiful leaves are most ornamental when associated with cut flowers. We have succeeded best with this variety when no attempt has been made to dry it off.

Gloxinias and Achimenes.—The earliest of these have gone to rest, and may be removed as opportunities offer from the old soil in which they were grown to be stored in pans or boxes until they are wanted again. They will be safe in any cool place from which frost is excluded, provided the sand or soil amongst which they are laid is kept perfectly dry. Do not prematurely dry off later plants, but water them judiciously until their foliage and stems show signs of decay, when water may be gradually withheld.

Sphærogyne latifolia.—This and Cyanophyllum magnificum when well grown are conspicuous plants in the stove. Now that it has been necessary to diminish the supply of moisture in this structure, a sharp look out must be kept for thrips, which if allowed to become established upon the foliage of these will soon ruin them. Tobacco water applied with a sponge is the best means of destroying tbis pest if it appears.

THE BEE-KEEPER.

NOTES ON BEES.

BAD SEASONS.

"It may be safely asserted that there is scarcely a bee-keeper to be found who can recall such a disastrous honey season as the one now drawing to a close," was stated by a contemporary recently, but this is very inaccurate. Well managed bees, even in this disastrous year, either have or will give a surplus, and similarly managed stocks will not require any feeding. But it is very different with the unsuitable hives recommended by some writers and authorities, though surplus honey might have been obtained had proper hives and management been employed. I cannot recall every bad season that has occurred in my life, but I remember perfectly between 1835 and 1840 that the bees had to be fed during the whole summer. So great was the mortality amongst bees at that time that many bee-keepers lost all of them. Drip honey sold wholesale as high as 20s. for 5 lbs., and £10 was offered for one hive. I think it was in 1837-1838 that the Clyde was frozen as far down as Dumbarton Castle, and I remember well

being on board the "Old Vale of Leven" (the only steamer able that day to break the ice). After that April brought severe thunderstorms, as it did this year, and the summer was a cloudy one throughout. Skipping a few years, between 1845 and 1850, the seasons were as unfavourable. Then about 1852 we experienced one of the worst seasons on record. We had to feed our bees until they were taken to the Heather, and when there, for at least a month they did not get an opportunity to so much as air themselves. 1860, 1861, and 1862 were three bad years in succession, and in many places bees did not gather 5 lbs. the whole time. Other bad years were passed until 1877, when bees were dying of want at the end of July. I could name other seasons that have been worse for bees than the present one, but the above will suffice to show the accuracy of my statement. In one of these seasons, about 1860, honeycomb was sold in London at 7s. 6d. per pound.

CARNIOLIAN QUEENS.

In the same journal "Amateur Expert" makes some statements regarding striped *v.* plain Carniolian bees. Had he been a professional expert instead of amateur he would have done a good service to bee-keepers, and particularly to those people who make up their minds to die when a bee stings. He does not blame Mr. Benton directly for introducing banded Carniolians, but his article certainly conveys that meaning. I have had considerable experience with Carniolians, perhaps more so than any other person in the United Kingdom, and I have also had considerable experience, through correspondence with Mr. Benton, and know well the ill usage he has received at the hands of some English dealers. It is against the latter "Amateur Expert" should have directed his sarcasm. It is they alone who are responsible for importing impure Carniolians into this country. I have proof of it, and the worst of it is that they labelled the queen's cage as Frank Benton's first grade queens, while in fact they never had a queen from him. These are facts, and so are the following. Mr. Frank Benton, at great expense, and great risk to his own and family's health, went from America with a determination to hunt up new varieties of bees and present these to the public in a pure state. He has done this, but, like all true benefactors, is maligned, by people, too, who should have acted differently. Only from the English dealers have I received striped or crossed Carniolians, but from Benton not one but the pure, possessing their true amiability, he having done everything in his power to guard against impure blood.

But what about the stripes? "Amateur Expert" gives no information further than any amateur can do. It therefore does not appear as known to him that there are two sorts of stripes, the one indicating crossed bees, the other hereditary to the race, consisting of two spots at the sides or one ring of russet extending to the sides on the anterior part of the belly; this russet or russety brown does not extend beyond the hairs in the true type, but in the crosses it is well defined on the shell or skin of the bee, and these bees are generally of a vicious nature. I have had many queens from Benton both direct and from Messrs. Neighbour through him. These have not only been free from brown markings, but possess the true silvery appearance which characterises that race. Those that cannot be distinguished from black bees are not Carniolians.

THE COMBINATION OR LONG-IDEA HIVE.

I have read with interest the remarks upon the above hive by "A Hallamshire Bee-keeper," and was well pleased to see that he has had the pluck to tell your readers how old a hive it is. Long ago I kept bees in hives of that nature, and the late Mr. T. W. Woodbury not only kept bees in that kind of hive, but pointed out its defects, which were numerous, and these defects, as well as to the imperfect make of the hive in other respects, caused the death of the bees, and not as "A Hallamshire Bee-keeper" suggests, over-manipulation. I quite agree with much that "A Hallamshire Bee-keeper" states. Some points I may take up again, but at present I may state that there are other moves to be made with bees than to the Heather. Some bee-keepers have to move their bees in April to the Willows and fruit blossoms, then to the Clover, and again to and from the Heather, and were there no hives but the combination type there would be few bee-keepers. Not only is the storifying or tiering hive the best for moving about, but it is the hive for profit as well.

By again following up the Simmins plan of requeening a hive I had a queen killed, the only one I have lost for a long time. Bee keepers should take the hint.

DAHLIA FLOWERS AND BEES.

I have never observed that these or any other flowers were injurious to bees. Our Mignonette this year has yielded much honey, and I have frequently observed bees in a sleepy state on it, but I attributed this to atmospheric influence and not to the flowers or honey, as the sleepy bees are always a very small per-centage of those that carry much honey and pollen from that or any other flower.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book (*W. Langley*).—Thompson's "Gardeners' Assistant" will possibly answer your purpose. It is a large volume, and the price necessarily not low. It can be obtained through a bookseller.

Tomatoes (*A. W. G.*).—Write to Mr. James Webber, Central Avenue, Covent Garden, W.C.

National Rose Society's Catalogue (*N. B.*).—Write to the Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, Kent.

Echites (*W. S. S.*).—Some of the Echites succeed best in a stove, and some require a greenhouse temperature, but it is probable your plant is not a member of this genus, as the name is new to us.

Quick Hedge Shoots Dying (*Heathfield*).—You will find in another column some notes on the abundance of insect pests this season, especially referring to their effects on hedges. Perhaps also the soil is insufficiently drained or otherwise in an unsuitable condition.

Pride of Lincolnshire Pea (*H. Marriott*).—The specimen of haulm and pods testify to the productiveness of the variety, one stem containing eleven pairs of pods and three singles. We observed the dish that was sent to a recent meeting of the Royal Horticultural Society, and think a request was entered that the variety be sent to Chiswick for trial. The pods were very fine.

Tomatoes (*Single-handed*).—Perhaps your best course would be to send a specimen of the fruit to the firm from whom you had the seed, asking if the variety is true. The trials to which you refer were very carefully conducted, and you may rely upon their accuracy. With the other variety mentioned we have had no experience. We are gratified to learn that you have found the Journal useful, and we reciprocate all your good wishes.

Concrete for Vine Border (*J. P.*).—The most suitable material is gravel, which does not contain much, if any, loam or clay, but is of a non-binding nature. It may be passed through a sieve with inch mesh, using that passing through the sieve, and if very sandy it should be freed of it by a quarter-inch sieve, rejecting the sand. To the gravel add one part of freshly slaked lime to two of gravel, and form it into a mortar-like consistence by adding water and mixing. Lay it 4 inches thick, and evenly smoothing with the back of a spade. It may be laid on the subsoil, it being given the proper incline to the drain, which should be

laid on the concrete, the bottom falling to it from all points. The drain should have proper fall and outlet.

Trees and Shrubs for Clay Soil (*C. L. J.*).—Of the kinds you name Ribes speciosum is not likely to succeed unless given the protection of a wall. Lilac, single pink May, and Syringa, will no doubt do well, and the Lime may do so if there is no water lodging in the ground. Laurel and Austrian Pine will succeed, the latter bearing exposure well; indeed it is the best shelter tree extant. Butcher's Broom and Gum Cistus would suffer from frost. Lonicera flexuosa would do on the west aspect of the house, also Bignoni aradicans sanguinea, Clematis Jackmanni, C. Henryi, Aristolochia Sipho, and Glycine sinensis. Jasminum nudiflorum, Cratægus pyracantha Lelandi, and white Jasmine (Jasminum officinale grandiflorum majus) on the east. Two Roses for front of house may be Gloire de Dijon and Rêve d'Or, or Celine Forestier.

Hyacinths and Tulips in Pots (*W. S. S.*).—About six weeks are required for the pots to remain plunged in ashes after the bulbs are potted. In the absence of ashes sand may be employed, and if of a sharp gritty nature is quite as good. We invert a small pot over the bulb of the Hyacinth, and cover with about 6 inches of cocoa-nut fibre refuse. As both the Hyacinths and Tulips will have grown somewhat when they are removed from the plunging material, care must be taken not to expose them suddenly to strong light or powerful sun, but they must be gradually inured to it, so as to prevent the foliage being damaged. Placed in a light airy position in a greenhouse, they will flower in March and April. The Tulips we presume are of the usual early varieties. A suitable compost for potting the bulbs is turfy loam of medium texture broken up moderately fine, to which add a fifth of well decayed manure or a fourth of leaf soil and a sixth of sharp sand. A quart of soot may be added to every bushel of compost, and the whole thoroughly incorporated.

Ground Infested with Wireworm (*H. C.*).—The wireworms certainly change into a winged insect—viz., beetles, well-known under the names of click beetle, snap beetle, spring beetle, or skipjack. There are many species of click beetles. The most hurtful species, according to the observations of entomologists, are Athöus hœmorrhoidalis, Agriotes lineatus, A. obscurus,.and A. sputator. Their depredations are in some instances known to continue over five years—*i. e.*, when they are in the larval condition. They are most abundant on unbroken ground, in which they multiply and spread to adjacent ground. Soil that has lain fallow or has been in grass for some years and is broken up, is often so infested that the crops grown in it are apt to suffer severely from wireworm. Perhaps the most effectual remedy is to starve out the larvæ, merely turning over the ground frequently, alike to destroy weeds and expose the wireworms to the eyes of birds, particularly starlings. If this be objectionable, dress the ground with fresh gas lime at the rate of half a bushel per rod, disposing it evenly on the surface, and point in lightly with a fork; in fact the ground should be merely pricked over. This may be done now. In the course of a month or six weeks in favourable weather fork over the ground a spit deep. Let it lie until February, and then trench it as deeply as the good soil allows. It may be manured afterwards, pointing it in, and planted in due season with Gladioli. Pieces of Carrot or Potato may be used as traps after the Gladioli are put in. These should be turned a little beneath the surface, and removed daily, examined, and the wireworms on them collected and destroyed.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials suffieing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. We have several packages of fruit in which there is no indication of the name of the sender, and consequently it is impossible for us to notice them. (*Jno. Weaver*).—Loddington. (*Edmund Essing*).—1, Suffolk Thorn; 2, Comte de Lamy; 3, Fondante d'Automne; 4, Beurré Superfin; 5, Vicar of Winkfield; 6, Devonshire Queen (*A.*).—1, Beurré Rance; 2, Bergamotte Esperen; 3, Beurré Diel; 4, Beurré Langelier. (*Fullbrooks*).—The numbers of 1 and 4 were loose. The Pear is Bergamotte Esperen; the Apple not known; 2, Hawthornden; 3, Summer Strawberry; 5, Chaumontel; 6, Susette de Bavay. (*J. Mogridge*).—1, Beurré d'Amanlis; 2, Pearson's Plate; 3, Hawthornden; 4, Beauty of Kent; 5, Cellini; 6, Braddick's Nonpareil. (*G. L. Court*).—Maréchal de Cour, will succeed as a standard, but better as a bush. (*F. Alexander*).—1, Dumelow's Seedling; 2, Keswick Codlin; 15, Red Astrachan; 10, Lord Suffield; 18, Gravenstein; 14, Warwickshire Pippin.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. H.*).—We do not undertake to name varieties of Pelargoniums; 3 is Abutilon Queen of the Yellows; 4, Nerine Fothergilli; 5, Abutilon vexillarium. (*R. O. S.*).—1, Asplenium cicutarium; 2, Adiantum scutum; 3, Adiantum farleyense; 4, Pteris internata. (*W. P.*).—1, Nerine coruscans; 2, Nerine Fothergilli major; 3, Lælia Perrini.

COVENT GARDEN MARKET.—October 10th.

IMPROVEMENT in the demand for Peaches, otherwise no alteration.

FRUIT.

	s. d.		s. d.		s. d.		s. d.
Apples, ½ sieve	2 6	to	4 6	Lemons, case	10 0	to	15 0
Cherries, ½ sieve	0 0		0 0	Oranges, per 100	4 0		9 0
Cobs, 100 lbs.	60 0		65 0	Peaches, dozen	2 0		6 0
Currants (Red), ½ sieve	0 0		0 0	Pears, dozen	0 9		1 6
,, (Black), ½ sieve	0 0		0 0	Plums, ½-sieve	2 0		4 0
Grapes, per lb	0 6		2 6	St. Michael Pines, each	3 0		5 0

VEGETABLES.

	s. d.		s. d.		s. d.		s. d.
Artichokes, dozen	2 0	to	3 0	Lettuce, dozen	0 9	to	1 3
Asparagus, bundle	0 0		0 0	Mushrooms, punnet	0 6		1 0
Beans, Kidney, per lh.	0 2		0 0	Mustard and Cress, punt.	0 2		0 0
Beet, Red, dozen	1 0		2 0	New Potatoes, per cwt.	8 0		14 0
Broccoli, bundle	0 0		0 0	Onions, bunch	0 3		0 0
Brussels Sprouts, ½ sieve			0 0	Parsley, dozen bunches	2 0		3 0
Cabbage, dozen	1 6		0 0	Parsnips, dozen	1 0		0 0
Capsicums, per 100	0 0		0 0	Potatoes, per cwt.	4 0		5 0
Carrots, bunch	0 4		0 0	,, Kidney, per cwt.	4 0		8 0
Cauliflowers, dozen	3 0		4 0	Rhubarb, bundle	0 2		0 0
Celery, bundle	1 6		2 0	Salsafy, bundle	1 0		1 6
Coleworts, doz. bunches	2 0		4 0	Scorzonera, bundle	1 6		0 0
Cucumbers, each	0 3		0 4	Shallots, per lb	0 3		0 0
Endive, dozen	1 0		2 0	Spinach, bushel	1 6		2 0
Herbs, bunch	0 2		0 0	Tomatoes, per lb.	0 3		0 7
Leeks, bunch	0 3		0 4	Turnips, bunch	0 4		0 0

CUT FLOWERS:

	s. d.		s. d.		s. d.		s. d.
Abutilons, 12 bunches	2 0	to	4 0	Margnerites, 12 bunches	2 0	to	6 0
Arum Lilies, 12 blooms	3 0		6 0	Mignonette, 12 bunches	1 0		3 0
Asters, dozen bunches	2 0		4 0	Pansies, 12 bchs	0 0		0 0
,, French, per bunch	1 0		1 6	Pelargoniums, 12 trusses	0 6		1 0
Azalea, 12 sprays	1 0		2 0	,, scarlet, 12 trusses	0 3		0 6
Bouvardias, bunch	0 6		1 0	Pyrethrum, doz. bunches	2 0		4 0
Calceolaria, 12 bunches	0 0		0 0	Roses, Red, 12 blooms	0 6		1 0
Camellias, 12 blooms	3 0		4 0	,, (outdoor), 12 bchs	3 0		6 0
Carnations, 12 blooms	1 0		2 0	,, (indoor), dozen	0 6		1 0
,, 12 bunches	4 0		6 0	,, Tea, dozen	1 0		2 0
Chrysanthemums, 12 bl.	1 0		4 0	,, yellow	2 0		4 0
,, 12 bchs.	2 0		6 0	Stephanotis, 12 sprays	2 0		4 0
Cornflower, 12 bunches	1 0		3 0	Stocks, 12 bunches	4 0		6 0
Dahlias, 12 bunches	2 0		4 0	Sweet Peas, dozen	2 0		4 0
Daisies, 12 bunches	2 0		4 0	Sweet Sultan, 12 bunches	2 0		4 0
Encharis, dozen	2 0		4 0	Tropæolum, 12 bunches	1 0		2 0
Gardenias, 12 blooms	1 6		4 0	Tuberoses, 12 blooms	0 4		0 9
Lapageria, 12 blooms	1 0		2 6	Gladiolus, 12 sprays	0 6		1 6
Lavender, 12 bunches	3 0		4 0	Violets, 12 bunches	1 0		1 6
Lilium longiflorum, 12 blooms	3 0		6 0	,, Parme (French), per bunch	3 0		4 0

PLANTS IN POTS.

	s. d.		s. d.		s. d.		s. d.
Aralia Sieboldi, dozen	6 0	to	12 0	Foliage Plants, var., each	2 0	to	10 0
Arbor vitæ (golden) dozen	12 0		24 0	Fuchsia, dozen pots	3 0		6 0
Asters, 12 pots	3 0		6 0	Genista, per dozen	6 0		0 0
Balsams, per dozen	0 0		0 0	Heliotrope, dozen pots	3 0		6 0
Begonia, various, per doz.	4 0		9 0	Ivy Geranium	0 0		0 0
Chrysanthemum, doz.	4 0		9 0	Hydrangea, dozen	6 0		12 0
,, large, doz.	15 0		24 0	Lilium, various, doz. pots	12 0		21 0
Coleus, dozen	2 0		4 0	Marguerite Daisy, dozen	6 0		12 0
Crassula, dozen	0 0		0 0	Mignonette, per dozen	4 0		6 0
Dracæna terminalis, doz.	30 0		60 0	Musk, dozen pots	0 0		0 0
,, viridis, dozen	12 0		24 0	Myrtles, dozen	6 0		12 0
Euonymus, in var., dozen	6 0		18 0	Nasturtiums, per dozen	0 0		0 0
Evergreens, in var., dozen	6 0		24 0	Palms, in var., each	2 6		21 0
Ferns, in variety, dozen	4 0		18 0	Pelargoniums, dozen	0 0		0 0
Ficus elastica, each	1 6		7 0	,, scarlet, doz.	3 0		6 0



OUR FUTURE.

At Michaelmas we begin another farming year, and our plans for the ensuing twelve months have to be considered and arranged. In doing this lessons of the past are not forgotten, and possibilities of improvement in the future also have attention. Long experience has shown that it is unwise to take results of a season or two as our guide to plans for the future, but rather to take an average of seasons and results as a basis for our calculations. If, for example, we were to take the last two seasons, we have one of drought, and another of extreme changes, but chiefly remarkable for its low temperature and wet weather. The summers of 1886-7 undoubtedly afford proof of the uncertainty of our climate, and go to prove that however carefully a farmer's plans may be laid, however good his practice may be, his aims and ends may be defeated by untimely weather. Well, such difficulties are taken for granted by all sensible men, and they continue to plod on, doing their utmost for the land and the crops they put in it.

In doing this, the plodding is not confined to a slavish, blind

following of the practice of their forefathers, but they aspire to positive improvement, for both science and practice have taught them that the fertility of the soil can be increased. Do our readers require proofs? Well, we can give them abundant evidence of the truth of our postulate. Take, for example, the evidence of two of our tenant farmers at our last market. One of them, a worthy man enough, told us he had acted upon our advice to rear plenty of pigs, and he had now upwards of a hundred, but he had threshed his Wheat in a soft damp condition, and had sold it for 24s. a quarter; worse still, the crop would not average 4 quarters an acre. The other tenant came to us with a complacent smile, and he had quite a different story to tell. "I had to thresh some Wheat for the straw," said he, "and I found the yield was fully equal to 7½ quarters, or 60 bushels an acre, and I had no difficulty in getting 38s. a quarter, for the sample was a good one." We were not at all surprised at the wide difference in the results of these two men, for the successful man is a high, or shall we say a sound farmer, keeping plenty of sheep, and taking especial care to attend closely to every important point of good husbandry, while the other has to struggle with the difficulties which ever attend a farmer with insufficient capital for the perfect cultivation of his holding.

In this statement we know we only repeat an oft-told tale, but its truth and force will cause it to be told again many a time and oft, and we must insist now that it has been proved beyond a doubt that the fertility of soils can be increased; that consequently more and better crops can be grown per acre; and that, given reasonable reductions of rents, security for capital, reduced railway rates, co-operation in buying and selling farm produce, and better education in agriculture and its practice generally, there can be no reason for taking anything but a hopeful view of our future as farmers. But to insure this there must be no clinging to old customs, no faith in the mere assertion that the muck cart is the backbone of farming, but an intelligent teachable acceptance of the light shed upon modern practice by scientific research and actual results. Well does a contemporary observe that the old farmer uses the proverb that "muck is the mother of riches." What, then, is muck? Animal excreta mixed with straw. So far science and ancient tradition agree. But here ancient tradition comes to an end, while science goes on to inquire what these articles consist of and whether they can be found elsewhere. It then ascertains that what in them is of advantage to the crop consists chiefly, if not exclusively, of three ingredients—nitrogen, potash, and phosphorus, which together form only about one-seventieth part of the total "muck." Whether this statement is true in practice is next tested by practice. Portions of land are taken of equal sizes and of similar soil; they are sown and cultivated in identical fashion, but to one is applied a full dressing of "muck," to another a dressing of chemical powders, clean and inodorous, containing the same quantities of the three ingredients as the muck has been found to contain. The experiment is continued for a space of forty successive years on one estate, it is tried on different soils in other districts, it is made to yield exact knowledge by most careful weighing of every application and of every crop.

The result is to establish irrefutably the fact that these three ingredients are really the sole constituents of muck which add fertility to the soil, and that if we give them in the form of dry powders or of solutions they are as active and as beneficial as if bestowed in the form of artificial manure. One difference is only found to exist. They are in their separate form much more immediately active, but also less permanent in their action. The consequence follows that it is not necessary to apply so much at once, but that the application must be repeated more frequently. In all other respects we have come to know for a certainty, not merely that we can replace the farmyard manure by the "artificial" manure, but that by using the one in addition to the other we can raise additional produce, that we can thus not merely maintain the fertility of the soil, but very largely increase it, and that by such means we can make an almost barren soil equally productive with one which Nature made rich.

WORK ON THE HOME FARM.

Very much of the more vigorous Barley was beaten down by heavy rain, and there was consequently so much difficulty in reaping it that more ears of grain are left out upon the stubbles than usual. None of this fallen corn will be lost, for pigs are taken out on the stubbles daily, care being taken to let them have water at mid-day and when they leave the stubbles in the evening. The scarcity of old straw caused many Barley stacks to be exposed to rain before the thatching was done. If, when such "weathered" stacks are threshed, the corn from the top of the stack is at all damp or soft, it had much better be used for the pigs than sold at a very low price as grinding Barley, for if realised in the form of pork it will certainly prove profitable, which it as certainly could not if sold at 22s. or 24s. per quarter for grinding.

Very little corn-threshing has been done as yet. We had all the Rye threshed, both because we required seed for sowing, and the surplus could only be disposed of advantageously now to buyers for the same purpose. The value of Rye as a green crop for early spring food is not fully realised by all farmers. It comes into use before any other green crop, gives a brisk second growth, which is available either for sheep or may be left to produce grain. If it is not required after the first growth is eaten off by sheep in folds it may be ploughed in in good time for a crop of Barley, or the land may be turned to account for a root crop. Roots, by-the-by, are so abundant that we have ordered an inferior crop of white Turnips to be ploughed in for Wheat. The Turniptops are vigorous enough, and there is a plentiful admixture of wild Oats among them, so that the green crop should impart enough fertility to the land for Wheat.

Wheat-sowing will be retarded both by the late harvest and by the late growth of the second crop of Clover. The first crop of Clover was altogether inferior and poor; the second, owing to the wet summer, is very abundant, and the difficulty has been what to do with it. We were able to fold some of it off with sheep, but it grew so fast and so strongly that the sheep were beaten and it had to be mown and harvested.

ENSILAGE.

THE sample of ensilage sent is from a silo opened last October, made from a mixture of Lucerne, Rye Grass, and grass cut between trees and round hedges, &c., salted and well trodden. The silo is made from a portion of a large brick barn with stone floor, a 14-inch wall built across the barn with a doorway left when built, then bricked up so as to be taken down when the ensilage is ready for use. One-third was cut in chaff before filling, and two-thirds put in long, chaff at one end, long at the other; but this year it is all put in long. There is a large loft above the silo, and the grass is carted and put in the loft and thrown down through trap doors into the silo, well shaken, salted, and trodden down firm. When filled wooden shutters were placed on the top and about 4 inches of bran on the boards, which were then weighted with several tons of stones. As used one shutter can be taken off and a portion taken down; thus there is not much exposed to the air. Bran for covering I find better than soil, as it can be used for pigs or with the chaff, and there is no grit to mix with the food. This year, instead of weighting with stones, two pieces of wood the length of the silo are put on the shutters, with three cross-pieces and small screw-jacks so as to give it level pressure. Small jacks to lift about 7 or 8 tons, with a large piece of timber fixed to the bottom of the beams in a loft to keep the jacks from raising them out of their place. I find it a very useful and not very expensive silo.—C. OSMAN.

[The sample sent we have previously referred to as remarkably sweet and excellent in all respects.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. Sept. and October.		9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	30	29.719	45.8	43.1	N.	55.9	54.3	43.5	99.4	40.4	—
Monday	1	29.708	45.0	41.7	N.W.	53.3	54.3	45.3	97.1	31.9	—
Tuesday	2	29.334	42.4	41.1	N.	51.4	46.1	35.3	67.6	28.2	0.134
Wednesday	3	29.399	37.2	37.2	N.	49.7	50.3	29.3	63.0	30.5	—
Thursday	4	29.650	43.6	42.8	N.	48.2	53.2	35.8	75.0	28.8	0.018
Friday	5	29.727	40.0	37.0	W.	47.7	53.4	29.8	98.3	27.2	0.014
Saturday	6	29.854	37.8	37.1	N.W.	46.5	51.8	31.2	95.9	32.3	—
		29.627	42.0	40.0		50.4	51.9	34.3	85.2	30.9	0.171

REMARKS.

30th.—Brilliant autumnal day.
1st.—Brilliant all day.
2nd.—Cloudy morning, wet afternoon, fair evening.
3rd.—White frost, foggy early, hazy most of the day.
4th.—Fine bright morning, showers in afternoon and evening.
5th.—Bright morning and fine afternoon except for a heavy shower at 4.30 P.M.
6th.—Generally bright and fine; sprinkle of rain about 3 P.M., but no measurable quantity.

A generally fine week, with N. and W. winds, and clear sky, the effect of which has been to permit great terrestrial radiation, which has produced exceptionally cold nights, the average minimum being only 34.8°, or 16.4° below the previous week, and about that due to the 1st of January.—G. J. SYMONS.

CHISWICK.

CHISWICK may fairly be described as the centre of interest in the horticultural world this week, numbers of persons finding their way to the historic garden, while a vastly greater number who cannot do so will scan the reports of the proceedings in the Press, and derive hints therefrom that will be of service on the important subject of fruits—their selection and management.

The Exhibition is of great merit and magnitude, the noble vinery being filled with selections of Apples, aud a huge marquee occupied with Pears, upwards of 5000 dishes of fruits being staged, forming one of the finest and most instructive displays that have been seen there or elsewhere. The Conference of growers and persons interested in fruit production, and the papers read each day, will render the week memorable. For the convenience of visitors and officials refreshments are provided in the curvilinear vinery and seed room, and only a continuance of fine weather is requisite for making the event a great success. Further particulars will be found in another page.

The old story of Chiswick being "too far away" to attract visitors would have weight probably, if what are called "shows," but which are only sections of what the public nowadays expect to find in an exhibition, were held at fortnightly intervals ; but it is not too distant from everywhere when something worthy of its name and traditions is provided to command national attention, and that is what the work of a Royal Society ought to do. The gathering of fruit and fruit growers comes as a revival of life and spirit, and ought to have a strengthening effect, and do something to compensate for the waning meetings in Westminster. The "Drill Hall" gatherings have evidently become tiresome to nearly all concerned, and the events of the present week prove once more, and the lesson should not be lost, that Chiswick is still the backbone of the Royal Horticultural Society. Let London be its head, as it must be for a time at least, and the seat of administration, Chiswick as long as it exists must be the practical exponent of its work. It should be the national seat of horticulture, as Kew is of botany, and both should have a share of Government support for national purposes. It is by the application of horticultnral practices to agricultural routine, in a greater measure than has hitherto prevailed, that the resources of the soil will be best developed and the value of land maintained and increased.

As a seat of education for focussing and disseminating information on the economical raising of food products Chiswick stands alone. The elements of success exist there, and have not to be created, neither can they be removed. They can be neglected allowed to remain quicscent, or vanish ; or they can bc expanded, and with this expansion knowledge of the greatest importance could and would be gained and distributed, not for the advantage of a corporate body or a craft, but for the whole community.

It is natural enough for opposition to be called forth when State aid is suggested for a particular tradc or industry. But horticulture in the abstract is not a trade, and is a great deal more than an industry. It is the root of all trades, for it is the parent of agriculture, on the well-being of which trades depend, for it provides the necessities of their existeuce, aud the greater the provision is, the greater is the general prosperity. Chiswick should be a great educational establishment, as Kew is, and as such have a reasonable share of support from the State. Grants are made for the promotion of education in the arts and sciences, also for the improvement of dairy farming, and why should not they be made in furtherance of profitable land cultivation, which is a subject of not less practical importance than any to which support is accorded? Chiswick is the experimental ground of the only chartered Horticultural Society in the kingdom, and therein rests its priority and singularity of claim. It should be a recognised school of instruction, maintained by and for the nation, testing by experiment the value or otherwise of different crops, the information so acquired to be at the disposal of all. That is what Chiswick ought to be in the interests of the common weal, and when an agricultural department is established by the Government. the opportunity must not be overlooked for the embodiment of horticulture therewith, for other than field crops must have attention in the future if the demands of the population are to be met to the utmost possible extent, as they undoubtedly should be, from British fields and gardens. With adequate means, and these in comparison with expenditure in other ways would be trifling, the Royal Horticultural Society could do service to the nation greater and better than any arising from private adventures conducted, as all adventures are, and must be, for personal gain.

The work done in the Gardens this year has been as good as the means for producing it allowed. The trials of Strawberries, Cabbages, Onions, Peas, Potatoes, and flowers have resulted in the indication and certification of varieties of prominent excellence, after the most careful comparison and critical examination by independent and competent men. Hardy fruit culture has been conducted in its various forms, and with such a collection of varieties as cannot be found together elsewhere. The best examples of pruning can be compared with culture in which the knife plays a very small part, and the results show that in the commercial production of fruit, regardless of the shape of the trees, the knife too freely used may be a costly instrument. The influence of stocks and varieties is apparent, and the popular fallacy exploded of the profitableness of the Blenheim Pippin Apple for planting. So-called fruit-growing advisers have presented the claims of this variety in such extravagant language in the newspapers that many persons must have been misled, and a corrective is needed. It is afforded at Chiswick, for of all the chosen varieties grafted and planted for trial during the last fifteen years, the much-extolled Blenheim is the most unprofitable of all, and the land occupied by trees of it would have given an infinitely better return if it had been cropped with Potatoes and Cabbages.

Visitors to the Garden have seen, and others will see, that Grapes worthy of inspection and profitable as a crop can be grown without an expenditure on borders greater than is incurred in the preparation of ground for ordinary fruit trees. The long range of Gros Colman shows what ordinary soil will do with a little fresh trenched in with it, supplemeuted by a rich surface dressing of manure and a few good dredgings of "Thomson's." Chiswick is, indeed, instructive in many ways, and might be made a great deal more so if adequate means were afforded for its management.

Other features of the gardens that have commanded attention this year were Figs in pots, bearing most abundantly and exemplifying mastery in their culture, and Tomatoes planted out in a large span-roofed house. It is doubtful if a finer example of Tomato culture has been seen this year than in the house in question. An engraving on another page gives an idea of what the plants were like a few weeks ago. £70 worth of fruit have been sold from them now, and much remains to be gathered. This is a splendid success in a notoriously bad Tomato season. Of the varieties grown Perfection is the chief, yielding the finest fruits and perhaps the most remunerative crop. Horsford's Prelude has borne an extraordinary abundance of smallish fruits, in long rope-like clusters—the freest setter of all. Ham Green Favourite, apparently a selection from Hathaway's Excelsior, has grown strongly and produced fine fruits, while the variety last named is still bearing

well. Tennis Ball, medium sized, round, and smooth, has given satisfaction, and the yellow fruited Blenheim Orange has yielded a good crop of fine fruit. Scarlet fruits sell the best in London, the largest of these realising the highest price ; but it is worthy of note that the sweeter yellow fruits, according to the experience of Mr. Pearson of Chilwell, command 2d. a pound more than the reds in Nottingham market. This Tomato house has proved remunerative.

The collection of Chrysanthemums grown in pots cannot be a striking success, and the cost incurred in their culture will take the gilt off the Tomato gingerbread. Any experts if they had been consulted would have told the authorities who advocated the culture of these plants that they were too late in their decision. The best plants were gone at the time, and numbers of the newer varieties sold out. The plants have been grown as well as it was possible to grow them under the circumstances, but these were such as to render success as it is measured in these days a sheer impossibility, as every "Chrysanthemum man" knew when he saw the plants on their arrival in late spring. It is not suggested the display will be a miserable failure or anything of that kind, but it cannot rank with the best, and it is nothing but right that the cause be recorded.

NOTES FROM A HERTS GARDEN.

On October 3rd 7° of frost was registered, 9° on the 5th and 8th. Every tender plant is blackened. Almost the only flowers that remain are the Michaelmas Daisies — namely, Aster ericoides, flowers white with yellow centre, which, if small, are numerous and one of the most elegant of the genus ; A. novæ-angliæ, rose with orange centres ; A. novæ-angliæ rubra, bright magenta ; and A. novæ-belgiæ, with bluish-purple flowers in large heads. Anemone japonica and its var. alba are in fair condition, also Tritoma Uvaria and Galtonia candicans, but they are in somewhat sheltered situations, and so also are the perennial Sunflowers. The annual Sunflowers are over, though they were extremely gaudy before the frosts. What a very useful flower the "New Miniature" Sunflower is for decoration and cutting purposes. Its small, elegant, bright golden yellow single blooms with a dark velvet centre, borne abundantly from July to frost, render it peculiarly valuable, and its stems are long enough for most purposes, its neat foliage adding to its attractiveness. I would mention Doronicum plantagineum excelsum as being a very elegant plant with yellow flowers, usually solitary and terminal, which attains to a height of 4 to 6 feet, flowering in spring and more or less right away to October. But to return to the Sunflowers ; how they have grown this year ! They seem to enjoy the gloom and drip. One of the most graceful, best, and useful decorative autumnal plants is Helianthus orgyalis, which attains to a height of 6 to 10 feet ; stem rigid, somewhat sparsely clothed with narrow recurved leaves alternately set ; flowers yellow, small and numerous. H. decapetalus has flowers 2 or 3 inches across, solitary or terminal on short twiggy branchlets. August to October, height 5 feet. H. multiflorus major is a large form like H. decapetalus, the flowers being more numerous and larger, and it not infrequently appears as a reversion in plants of the double perennial Sunflower (H. multiflorus flore pleno), indeed the plants of the latter have during the past two seasons produced both forms in the same individuals. The single form is the stronger grower, attaining to a height of 5 feet, the double having a height of 3 to 4 feet. H. multiflorus maximus is a magnified form both in plant and flower of "major," attaining a height of fully 8 feet ; flowers large, golden yellow, single ; one of the best autumn plants. H. rigidus has glistening golden yellow flowers about 4 inches across, with chocolate disc, good as long as it lasts, its season being August. Its flower heads, and sometimes the stems, dry up before expansion in a most unaccountable manner. H. atrorubens has scattered heads with a purple disc and yellow rays. It has purple stems, attaining a height of 3 feet or more. The Sunflower will grow in almost any kind of soil, but prefers a good moisture-holding one, and well repays for mulching and watering in dry weather.

One of the other most striking plants of the year has been Echinacea purpurea, with reddish-purple heads and a raised dark centre, the peduncle long, producing a solitary terminal flower head. In a cut state it is very quaint, the ray florets drooping handsomely. It is a hardy perennial, requiring a deep rich loam, when it grows 3 to 4 feet high. In fine contrast with the Echinacea is Rudbeckia Newmanni or speciosa, the flower heads 3 to 4 inches across, the ray florets orange, which contrast well with the black purple disc. It is fine as a plant, and the flower-heads are superb in vases, &c., its long stalks, 6 to 9 inches, rendering it particularly valuable. R. maxima (or speciosa of some) has the ray florets drooping as in Echinacea ; disc columnar, of a dull brown, flowers solitary. It attains to double the height of R. speciosa or Newmanni, and is a really handsome plant. Arnica montana ; flower head yellow, 2 inches across, arranged in a corymb, freely produced during July to September. It is a showy species, attaining to a height of 2 feet. Senecio pulcher produced its large corymbose flower heads freely, ray florets purple (reddish), which are longer than the yellow disc. It grew to a height of 3 feet, and was fine when the frosts came, and had been for weeks. A strong soil evidently suits this plant.

Lilies have done badly. Lilium longiflorum Harrisi is the only one worth mentioning, but Crinum longiflorum seemed to revel in the wet, and flowered in July. The flowers are produced in an umbel of six to eight, funnel-shaped, the segments flushed with pink in the centre, and the peduncle is about 2 feet long. A bed of this superb plant has a graceful appearance ; the flowers are delightfully scented, and it is quite hardy. The season seems not to have suited aquatics, yet Bullrushes have thrown more heads than usual, and the White Lilies (Nymphæa alba) had foliage and flowers of unusual luxuriance. The latter appears to enjoy a good deposit of tree leaves which are blown in annually. N. odorata has most unaccountably disappeared, but we have good plants of N. odorata rosea (Boston Water Lily), and N. flava, yet neither flowered. Aponogeton distachyon flowered in June and again in September. The Water Flag, like the Nymphæas, likes a deposit of leaf soil. Its sword-like leaves are now grand, and its flowers are the showiest of the showy in their early summer season. There are few things that sooner get possession of space than Villarsia nymphæoides ; its leaves are pretty. Just when the frosts came the margin of the ornamental water was aglow with Lobelia cardinalis. We obtain a packet of seed, raise the seedlings in pans, prick off, and plant out one year, both in the water, on its edge, and out of the water, and get the next a flame of scarlet, dazzling beyond anything seen in the parterre.

Nelumbium speciosum out of doors has grown well and spread considerably, but there have not been any flowers. We hope for better luck next year, also with N. luteum, which, however, does not grow so freely as N. speciosum, yet it gains strength with age.—UTILITARIAN.

THE PROGRESS OF BOTANY.

VARIATION IN PLANTS.

(*Continued from page 346.*)

WHATEVER conclusions we arrive at on these points, everyone will agree that one result of the Darwinian theory has been to give a great impulse to the study of organisms, if I may say so, as "going concerns." Interesting as are the problems which the structure, the functions, the affinity, or the geographical distribution of a plant may afford, the living plant in itself is even more interesting still.

Every organ will bear interrogation to trace the meaning and origin of its form and the part it plays in the plant's economy. That there is here an immense field for investigation there can be no doubt. Mr. Darwin himself set us the example in a series of masterly investigations. But the field is well-nigh inexhaustible. The extraordinary variety of form which plants exhibit has led to the notion that much of it may have arisen from indifferent variation. No doubt, as Mr. Darwin has pointed out, when one of a group of structures held together by some morphological or physiological nexus varies, the rest will vary correlatively. One variation then may, if advantageous, become adaptive, while the rest will be indifferent. But it appears to me that such a principle should be applied with the greatest caution ; and from what I have myself heard fall from Mr. Darwin, I am led to believe that in the later years of his life he was disposed to think that every detail of plant structure had some adaptive significance, if only the clue could be found to it. As regards the forms of flowers an enormous body of information has been collected, but the vegetative organs have not yielded their secret to anything like the same extent. My own impression is that they will be found to be adaptive in innumerable ways which at present are not even suspected. At Kew we have probably a larger number of species assembled together than are to be found anywhere on the earth's surface. Here, then, is ample material for observation and comparison. But the adaptive significance will doubtless often be found by no means to lie on the surface. Who, for example, could possibly have guessed by inspection the purpose of the glandular bodies on the leaves of Acacia sphærocephala, and on the pulvinus of Cecropia peltata, which Belt in the one case, and Fritz Müller in the other, have shown to serve as food for ants? So far

from this explanation being far-fetched, Belt found that the former "tree is actually unable to exist without its guard," which it could not secure without some attraction in the shape of food. One fact which strongly impresses me with a belief in the adaptive significance of vegetative characters is the fact that they are constantly adopted in almost identical forms by plants of widely different affinity. If such forms were without significance one would expect them to be infinitely varied. If, however, they are really adaptive, it is intelligible that different plants should independently avail themselves of identical appliances and expedients.

Although this country is splendidly equipped with appliances for the study of systematic botany, our universities and colleges fall far behind a standard which would be considered even tolerable on the Continent in the means of studying morphological and physiological botany or of making researches in these subjects. There is not at the moment anywhere in London an adequate botanical laboratory, and though at most of the universities matters are not quite so bad, still I am not aware of any one where it is possible to do more than give the routine instruction, or to allow the students, when they have passed through this, to work for themselves. It is not easy to see why this should be, because on the animal side the accommodation and appliances for teaching comparative anatomy and physiology are always adequate and often palatial. Still less explicable to me is the tendency on the part of those who have charge of medical education to eliminate botanical study from the medical curriculum, since historically the animal histologists owe everything to botanists. In the seventeenth century, as I have already mentioned, Hooke first brought the microscope to the investigation of organic structure, and the tissue he examined was cork. Somewhat later, Grew, in his "Anatomy of Plants," gave the first germ of the cell-theory. During the eighteenth century the anatomists were not merely on a hopelessly wrong tack themselves, but they were bent on dragging botanists into it also. It was not till 1837, a little more than fifty years ago, that Henle saw that the structure of epithelium was practically the same as that of the parenchyma plantarum which Grew had described 150 years before. Two years later Schwann published his immortal theory, which comprised the ultimate facts of plant and animal anatomy under one view. But it was to a botanist, Von Mohl, that in 1846 the biological world owed the first clear description of protoplasm, and to another botanist, Cohn (1851), the identification of this with the sarcode of zoologists.

Now the historic order in discovery is not without its significance. The path which the first investigators found most accessible is doubtless that which beginners will also find easiest to tread. I do not myself believe that any better access can be obtained to the structure and functions of living tissues than by the study of plants. However, I am not without hopes that the serious study of botany in the laboratory will be in time better cared for. I do not hesitate to claim for it a position of the greatest importance in ordinary scientific education. All the essential phenomena of living organisms can be readily demonstrated upon plants. The necessary appliances are not so costly, and the work of the class-room is free from many difficulties with which the student of the animal side of biology has to contend.

Those, however, who have seriously devoted themselves to the pursuit of either morphological or physiological botany need not now be wholly at a loss. The splendid laboratory on Plymouth Sound, the erection of which we owe to the energy and enthusiasm of Prof. Ray Lankester, is open to botanists as well as zoologists, and affords every opportunity for the investigation of marine plants, in which little of late years has been done in this country. At Kew we owe to private munificence a commodious laboratory in which much excellent work has already been done. And this Association has made a small grant in aid of the establishment of a laboratory in the Royal Botanic Garden at Peradeniya, in Ceylon. It may be hoped that this will afford facilities for work of the same kind as has yielded Dr. Treub such a rich harvest of results in the Buitenzorg Botanic Garden in Java.

Physiological botany, as I have already pointed out, is a field in which this country in the past has accomplished great things. It has not, of late, however, obtained an amount of attention in any way proportionate to that devoted to animal physiology. In the interests of physiological science generally this is much to be deplored; and I believe that no one was more firmly convinced of this than Mr. Darwin. Only a short time before his death, in writing to Mr. Romanes on a book that he had recently been reading, he said that the author had made "a gigantic oversight in never considering plants: these would simplify the problem for him." This goes to the root of the matter. There is, in my judgment, no fundamental biological problem which is not exhibited in a simpler form by plants than animals. It is possible, however, that the distaste which seems to exist amongst our biologists for physiological botany may be in due in some measure to the extremely physical point of view from which it has been customary to treat it on the Continent. It is owing in great measure to the method of Mr. Darwin's own admirable researches that in this country we have been led to a more excellent way. The work which has been lately done in England seems to me full of the highest promise. Mr. Francis Darwin and Mr. Gardiner have each in different directions shown the entirely new point of view which may be obtained by treating plant phenomena as the outcome of the functional activity of protoplasm. I have not the least doubt that by pursuing this path English research will not merely place vegetable physiology, which has hitherto been too much under the influence of Lamarckism, on a more rational basis, but that it will also sensibly react, as it has often done before, on animal physiology.

(To be continued.)

SURFACE RENEWAL OF VINE BORDERS.

So much has been written on this subject that to bring forward anything really new would, I think, be rather difficult, but as the time for lifting unsatisfactory Vines has now arrived, I venture to make a suggestion. Mr. Abbey a short time back pointed out the errors of planting Vines deeply, and advised lifting the roots to the surface. I have seen a few vineries the occupants of which have been so treated, and it has been two or three years before anything like a full crop of fruit could be taken. Is there a preferable way to lifting the Vines? I think there is in many instances—namely, by taking the surface to the roots instead of bringing the roots to the surface. Obviously this would only be beneficial when the drainage is correct and the border good. The roots of numbers of Vines are too far from the surface. Year after year manure has been placed on the border, to the injury instead of benefit to the roots, by keeping out the sun's warmth. If the soil be taken off well down to the roots, and a light dressing of good compost given, then covered well with some strawy manure for the winter to be taken off in spring, I think it would in many cases give more satisfaction and less anxiety than lifting the roots, especially in cases where gardeners are entering on new duties, and wish to make an improvement the first season without the risk of failure through careless lifting.—EXPERIMENTO.

THE CULTIVATION OF THE CUCUMBER.

THE Cucumber is very popular in this country, and indeed in most countries on the Continent of Europe, in India, Africa, and America, where it is grown in great quantities and used in salads, pickles, and sometimes as a vegetable dish, but in this country it is principally grown as a salad.

There are several ways of cultivating the Cucumber, but the simplest of these is the method generally adopted by market gardeners in the open air by forming ridges or mounds, and the Cucumbers which grow are a small variety which is sold very readily to greengrocers and others from 1s. to 1s. 6d. per dozen during the summer months. The ridges are made and the plants cultivated in the following manner. After the ground has been selected it is marked out in 4-feet beds, and a trench dug 2 feet wide and 1 foot deep in the centre of it, which is filled with hot stable dung a little higher than the level of the surrounding ground, and the soil which is dug out is then spread over it when finished, forming a ridge. The seeds are then sown five or six together in a little clump on the top of the bed at the distance of 4 feet apart, and hand-glasses placed over each clump. When the plants are large enough to distinguish which are best, three of the most promising are left to cover the space between the clumps. Great care must be exercised in giving air and watering the plants as they grow, and when they fill the light three little stones can be placed under it to allow the plants to get out, which should be encouraged to cover the ground as quickly as possible. The after treatment consists in watering, stopping the points of the shoots, thinning and removing bad leaves. When the sun is scorchingly hot sometimes it is found necessary to shade the tender plants with Rhubarb leaves until they are thoroughly established, after which the same care is not needed, and the handlights may be removed altogether with safety. Cucumbers grown on the ridge system are more subject to the attacks of slugs than those in frames, therefore they should be carefully looked over every morning and the pests destroyed, or they would soon ruin the plants.

FRAME CULTURE.

Cucumbers are now mostly grown in frames by amateurs and in small gardens where there are no glass houses or pits; but at one time before glass was so cheap they were grown in frames by the most practical gardeners in the country. The great art in this method of culture is in making the hotbed, the materials for which may consist of stable litter, leaves, or spent tanner's bark. The bed may be made wholly of stable litter or of litter and leaves mixed together, or of barks and litter mixed together, according to convenience. The litter for this purpose should be thrown up in a heap to heat and turned over frequently to allow the rank gases to escape before the bed is made. If

leaves are mixed with the dung the bed will retain a steady heat much longer than if it was made of dung alone. In making the bed it should be 18 inches wider than the frame all round, and about a foot or 18 inches higher at the back than in the front. When the bed is made of dung and leaves, or of dung by itself, it should be well shaken up, the sides made square, and the surface beaten well with a fork as the work proceeds, but it should not be tramped until the last thing before the frame is placed on it. In making a bed with litter and spent tanner's bark the sides should be built with the rough dung and the centre filled with a layer of barks and dung, time about, and finished in the same way as the bed made of dung and leaves by tramping it all over before the frame is put on to keep it from sinking in one place more than in another. When the frame is put on the bed place a few good turves with the grass side down over the centre of it to keep down the strong heat, which, if too strong, might injure the roots of the young plants; after which form small hillocks in the centre of each light with a composition of loam and leaf mould in equal parts, and as soon as the heat of the soil is suitable, which may be ascertained by plunging a trial stick in it, the young plants may be placed out, two in each hillock, and supplied with tepid water, and the lights placed on the frame.

The after cultivation consists in stopping and training the growths of the plants, watering, shading, giving air, when the thermometer rises above 70°, and adding fresh soil to the bed as the plants grow, until the frame is filled. Some growers train the plants in the hillock, one to within 6 inches of the front, and the other to within 6 inches of the back of the frame before stopping them, while some cultivators stop the plants after they have made four or five leaves, which causes them to send out lateral shoots and come into fruiting a little sooner than those allowed to grow to within 6 inches of the sides before being stopped, but the plants are never so strong as those allowed to grow to near the sides of the frame. As the plants grow they should be stopped at one joint above the fruits, and all the male flowers and tendrils taken off as they appear, and one fruit only allowed to a joint, which should be placed in a glass tube for the purpose, if straight fruit is desired. When the frame is filled with stems and leaves some of the older ones may be thinned to allow a free circulation of air amongst them, and as the summer advances and the weather becomes warm large flower pots can be placed under each corner of the frame to allow the plants to grow outside.

Cucumbers grown in a hotbed made of dung do not require so much water as those in a bed heated by hot-water pipes, because the dung decays and becomes moist, and the roots penetrate deeply into the bed, which is not the case in beds heated by hot-water pipes. In the early stage of their growth air should be admitted carefully as soon as the sun comes out in the morning, but not before the glass has risen to 75°, and the frames closed early in the afternoon to husband heat, and the plants syringed. During very hot sunshine, when the plants are growing rapidly, they should be shaded for a few hours during the middle of the day, and in close town gardens like Cardiff Castle they would be all the better of a slight permanent shade made of whiting, lime, or buttermilk.

HOUSE CULTURE.

Enormous quantities of Cucumbers are now grown in the vicinity of all our large towns by market gardeners who make it a speciality. Span-roofed pits, 12 feet wide and 9 feet high, with a walk down the centre and beds on each side, with ventilation in the top, and heated by means of hot-water pipes, are specially constructed for growing them, so as to have fruit all the year round; but, as a matter of fact, it does not pay to grow Cucumbers during the winter months. I am credibly informed, however, that some of the large London market establishments produce no less than three or four millions of Cucumbers during the season, which are readily disposed of in Covent Garden Market at remunerative prices. The highest prices, however, are obtained in the spring and early summer months, when salmon is plentiful. There are two methods adopted in growing Cucumbers in pits, the express and the non-express systems. The express system consists in never giving air to the house at any time, and the non-express system in giving air when the temperature rises above 70°. I have not had any experience with the former, and will therefore confine my remarks to the other, or usual way of culture adopted in this district by gardeners.

To obtain Cucumbers in April and May the seed should be sown in the beginning of January in 48-sized pots and plunged in bottom heat. When the plants are large enough they are potted off into 3-inch pots and placed as near the glass as possible to encourage them to make a good sturdy growth, giving them plenty of heat and moisture. When they are 9 or 10 inches high they should be planted out in their permanent quarters at a distance of 5 feet apart. The soil should consist of half loam and half leaf mould, with a sprinkling of soot and wood ashes, all thoroughly incorporated. The pit or bed should be well drained, and the drainage covered with about 4 inches of good decayed manure, and filled to its proper height with the soil at once, and made firm by pressing it down all round with the feet or hands. After this strong neat stakes should be placed in the bed at the allotted distance and tied to the trellis. The plants should be planted close to the stakes, and as deep as the cotyledons, made firm all round, and trained to the stakes with a clean stem till they meet the trellis, when the lateral shoots are allowed to grow, which should be stopped at the first joint above the fruit, but the leading shoot should not be stopped until it grows to within a foot of the top of the trellis. After this the principal work consists in tying-in the shoots as they grow, stopping them, and removing old leaves, male flowers, and tendrils as soon as they appear. The plants should be encouraged to make a free growth by giving them plenty of liquid manure when they require it, and the house should be closed up in the afternoon to husband sun heat, and the plants well syringed.

The most destructive insects to the Cucumber are green fly and red spider. The former can be destroyed by fumigating with tobacco or tobacco paper, and the latter by washing the affected leaves as soon as it is noticed, and copiously syringing the plants night and morning. The Cucumber is subject to mildew and to a disease peculiarly its own, which is called "the Cucumber disease." The former can be destroyed by applying flowers of sulphur to the affected parts, but there is no good remedy known yet for curing the latter, which is a fearful scourge when it enters a Cucumber plantation, either in the house, the hotbed, or on the outside ridges.

I have said nothing about the varieties which are best for each of these systems. For the house and hotbed I would recommend Cardiff Castle, and for ridge culture a small variety called Stockwood.—W. ARTHUR TRESEDER.—(*Read at a meeting of the Cardiff Castle Gardeners' Improvement Society.*)

TREBBIANO AND WHITE TOKAY GRAPES.

WE have received two letters during the past week in which information is sought relative to the characteristics of these Grapes and

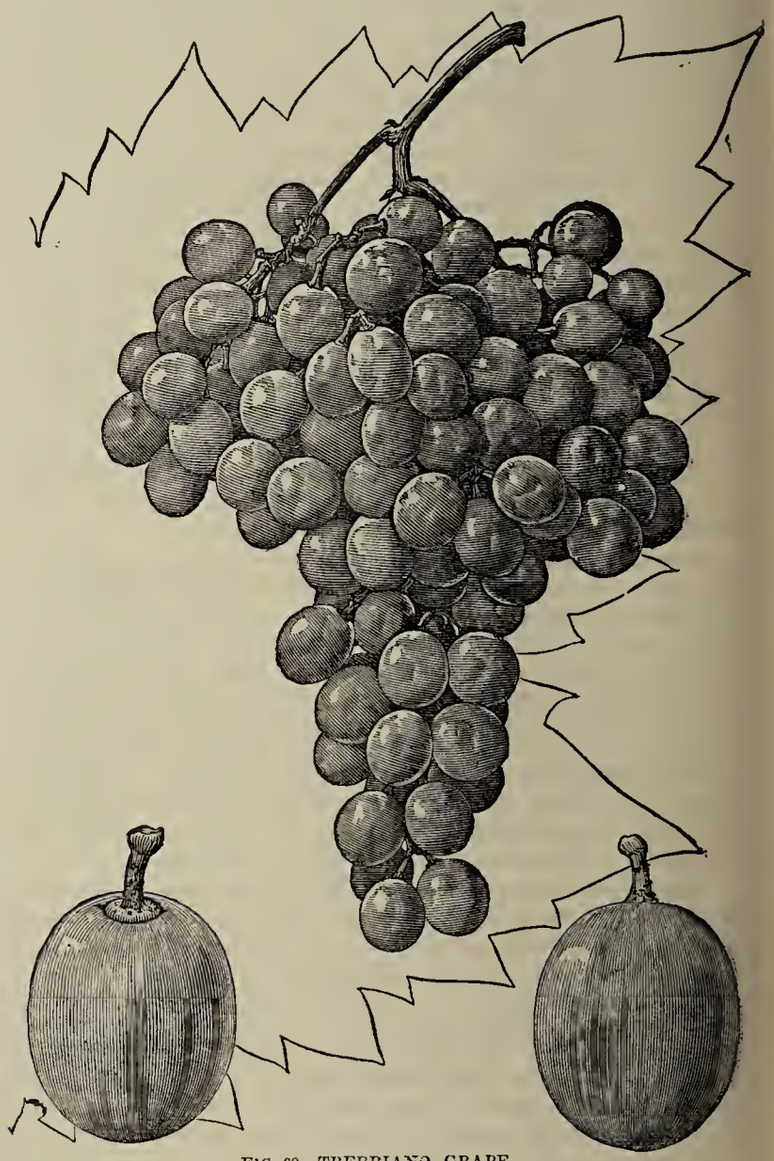


FIG. 39.—TREBBIANO GRAPE.

the differences between them. We know of no other way in which the subject can be made so clear as by citations from Mr. Barron's work on Vine culture and the illustrations the author has obligingly placed at our disposal.

TREBBIANO.—An oval white vinous Grape. Season: late. Merits: second-rate in quality, but valuable for its handsome appearance and late-keeping properties.

Vine.—Growth remarkably strong and robust, the young shoots being very thick, almost gross, but ripening freely; they are generally coated with down around the buds, which are large and prominent; moderately fruitful. Leaves large, soft, and much covered on the under surface with thick down; deeply toothed, dying off pale yellow.

Fruit.—Bunches of the very largest size, with broad, strong shoulders, and thick stalks, compact and always well set. Berries, medium-sized,

roundish-ovate, on stout footstalks. Skin greenish yellow, changing to pale amber when well ripened, tough or thick. Flesh firm, yet juicy, sweet, and pleasant, but lacking richness, excepting when very highly ripened.

History, &c.—The origin or introduction of this well-known Grape is unknown to us. It is large'y grown for late work. Some of the finest examples we remember to have seen were grown by the late Mr. Drewett when gardener to Mrs. Hope at The Denbies, Dorking, Surrey ; hence it was by some termed the Denbies Trebbiano. Mr. Curror of Eskbank exhibited at Edinburgh in 1875 a bunch of this Grape weighing 26 lbs. 4 ozs., which is the largest bunch of Grapes on record.

Cultural Notes.—Being of strong growth this Grape requires considerable spa-e to develope properly ; and, although it fruits freely along with Black Hamburgh, it well repays treatment similar to Muscats. Mr. Gilbert, of Burghley, who is one of the best cultivators of the Trebbiano we know, gives plenty of time and plenty of heat to ripen it thoroughly, when the berries keep sound into March and April, and are then very rich.

WHITE TOKAY.—An oval white vinous Grape. Season : late Merits : a first-class white Grape, very worthy of cultivation.

Vine.—Growth remarkably strong and vigorous, with a fine free constitution, the young shoots very strong and always ripening well ; very free-fruiting. Leaves large, deeply toothed.

Fruit.—Bunches above medium size, regularly formed, on strong footstalks, having strong shoulders ; compact ; always freely set. Berries large, ovate. Skin thick, greenish white, showing the venation through, becoming pale amber when fully ripe. Flesh firm, yet tender and juicy, with a sweet, pleasant, or sometimes rich flavour.

History, &c.—An old Grape, at one time much more extensively grown than it is at present, and confused to some extent with the Muscat of Alexandria, which in the north used to be called Charlesworth Tokay.

Cultural Notes.—Will succeed in any house suitable for the Black Hamburgh, but requires longer time to ripen thoroughly.

It will be observed that apart from the differences in the fruit the buds and under sides of the leaves of Trebbiano are downy, while those of the White Tokay are not. The work named in its reduced form should be in the hands of all growers of Grapes, and can be obtained from this office post free for 5s. 3d.

ORCHIDS

DISA RACEMOSA.

IN a recent issue of this Journal we gave an illustration of this Disa, and in the "Botanical Magazine" for the present month a coloured figure of the same species is given, with the following particulars by Sir J. D. Hooker and Mr. H. Bolus.

I am indebted to Mr. Bolus, who is preparing at Kew a Monograph of the genus Disa (for publication in the Transactions of the South African Philosophical Society) for the characters and the following description of this beautiful plant. It is, as he informs me, a native of moist grassy places on the eastern side of Table Mountain, Cape Town, at elevations of 800 to 2500 feet, flowering in December and January, and it extends thence eastward to Grahamstown, where it has been found by Professor MacOwan, now Superintendent of the Cape Botanical Gardens. It belongs to a section of the genus established by Mr. Bolus under the name of "Vexillata," in which the dorsal sepal is erect, nearly flat or slightly saccate ; the petals inarched and subexserted ; the lip usually narrow ; the rostellum high, erect, protruded or reflexed, its arms usually divaricate, and the column itself is produced behind into a petaloid appendage, which embraces the long narrow ascending or reflexed anther. This group contains four species.

D. racemosa was brought to the Royal Gardens from the Cape by Mr. Watson, foreman of the propagation department, who visited that colony in 1887, and it flowered in May of the present year.

DESCRIPTION.—Erect, glabrous, 15 to 30 inches high ; stem nearly straight, slender, distantly clothed with close wrapping sheaths with shortly spreading points. Leaves four to six, radical, linear-lanceolate, acuminate, laxly spreading. Racemes distantly four to nine-flowered ; flowers subsecund, deep rose-red ; bracts broadly ovate, acute, erect, about as long as the ovary. Lateral sepals broadly elliptic, obtuse, mucronulate below the apex, spreading, about ten lines long, seven to eight lines wide ; dorsal sepal ovate, concave, obtuse, bluntly and widely saccate behind just below the middle, about nine lines long and five in depth. Petals obliquely oblong, apex incurved, posterior margin erose, meeting and arching over the anther, adnate to the column at the base. Lip linear, acute, five lines long. Column erect or ascending ; rostellum with divaricate arms, bearing the glands at their apices, furnished posteriorly with a petaloid appendage reaching half way up, and closely embracing the anther ; glands facing the front of the flower.

FIXED TEMPERATURES.

IT gives me much pleasure to read the opinions of Messrs. Bardney and Young on this subject. I mentioned on page 261 that this gardening fad is not yet obsolete ; I am afraid far from it. It is surprising to note the obstinate opinion some gardeners still maintain on this head, in spite of their neighbours growing their crops equally well, and in



FIG. 40.—WHITE TOKAY GRAPE.

some cases even better than they, by the rational treatment set forth by Mr. Bardney on page 343. That such treatment will give satisfactory results goes without the saying, for it can be seen clearly demonstrated every day. What unpleasantness is often caused between the chief and his assistants through these fixed temperatures! Mr. Bardney seems fully alive to the best "ways and means" of maintaining these fixed temperatures. Can young men be blamed for resorting to these illegitimate means when they know perfectly well the chief will be round perhaps in a few minutes? If the mercury does not rise to the number that is attached to the top of the thermometer, means are used to make it do so. On the other hand, if the temperature is too high up goes the lights till the house is near the "fixed" standard. I trust all those gardeners that insist on these conditions will think seriously whether they are gaining by such hard and fast rules. A house that is forcing had far better stand 5° too high than open the lights in such a manner. Is the excess or the sudden chilling blast the more detrimental to plant

life? These and many others are questions that should come to all of us. That such gardeners and assistants are not myths I have ample proof. Can head gardeners wonder at their assistants deceiving them, when they insist on such unreasonable conditions? for everyone is well aware how difficult it is to keep these fixed temperatures when the temperature outside rises or falls rapidly, or when the wind is very rough. Where fixed temperatures are insisted upon I know it is very unpleasant for all concerned, for many places are deficient in heating apparatus, or the pipes are not laid properly; and then it is well nigh impossible to keep every house at any fixed degree.—JAMES B. RIDING.

ROYAL HORTICULTURAL SOCIETY.

NATIONAL APPLE AND PEAR CONFERENCE.

THE Exhibition of Apples and Pears in the Chiswick Gardens which opened on Tuesday last, the 16th inst., and closes to-morrow (Friday) evening, the 19th inst., is a very remarkable one, and though lacking the novelty that attached to the Apple Congress held in 1883, and the Pear Conference of 1885, it to a large extent combines the merits of both with some special characteristics of its own. There can be no doubt that from a purely practical point of view the present one is the best of the three, and when the official or select lists of varieties are issued they may be expected to possess more than ordinary value. It was a wise determination on the part of the Committee to restrict the number of varieties shown by each exhibitor, as it is only by such means that anything like useful selections for different districts could be obtained. That the exhibitors have fully entered into the spirit of the idea is amply proved by the care which, in the majority of cases, has been displayed in excluding worthless varieties and representing only the best. In a few cases perhaps it must be concluded that the exhibitors have bad trees, bad soil, a bad climate to contend with; but although there is a considerable difference in the size and quality of Apples and Pears staged from various districts, it is noticeable that the individual collections are more even, and consequently more satisfactory, than on the two previous occasions. At these meetings the struggle seemed to be who should show the largest number of varieties, and in consequence many of little merit were represented, and some that, except as curiosities, were absolutely worthless. However, both the former Conferences at Chiswick performed valuable service, and it is a subject of general remark that a most noteworthy illustration of this is afforded by the more accurate nomenclature displayed throughout the Exhibition.

Apples, of course, constitute the major portion of the Show, being in fact by far the most interesting and attractive feature. Pears are generally rather under the average size, and besides being wanting in the colour which renders the Apple display so varied and bright, they occupy a somewhat dark tent that certainly does not add to their effect. Over 5000 dishes are staged of Apples and Pears together, contributed by about 100 exhibitors, coming from all the chief fruit-growing districts from Devonshire to Scotland. The home counties are particularly well represented, Herts, Kent, Middlesex, and Sussex especially so, the collections of Apples from these counties constituting the best part of the Apple display. The large vinery or conservatory presents a beautiful appearance; not perhaps so bright as at the 1883 Congress, but there is a sufficient number of highly coloured Apples to render the effect very pleasing. The whole of this building is occupied with Apples, two tables extending the full length of the house, in addition to the side stages, being filled with exhibits. The great class for fifty varieties, in which there are sixteen exhibitors, fills the whole space of one of these tables, and would alone form a show of much importance and interest. The opposite table is mainly occupied with classes 2 and 3 for twenty-four varieties best adapted to the exhibitor's district, and the best twelve varieties of Apples respectively, the former class containing no less than twenty-nine entries, and the other nine. The side stages are filled with some of the smaller classes, such as those for six and twelve varieties of dessert and culinary Apples, Apples from cordons, bush, pyramid, and standard trees, those grown on special stocks, market varieties and new varieties.

To the Pears the large tent already noted is appropriated, a smaller one also being filled with these and a few Apples for which space could not be found in the conservatory. Ten classes are devoted to Pears, and the entries range from two in the market class to seventeen in that for twelve dessert varieties.

As regards quality the Apples are highly satisfactory, and they afforded a very agreeable surprise to many visitors who expected in such a season as the present one to find a considerable deficit both in size and quality. Many handsome fruits are shown, some probably having had the protection of glass, but there are abundant satisfactory specimens from trees in the open, and it must be said in justice to the nurserymen that the majority of these are exceptionally good for the season. On another occasion it might be advisable to provide a separate class for orchard house fruits, for at an exhibition of this character there is a danger that inexperienced persons might be disappointed when they failed to procure such magnificent fruits upon ordinary outdoor trees.

As already remarked the nomenclature is generally satisfactory throughout, but some of the exhibitors have taken rather more trouble than merely to furnish the names. For example, in the Dalkeith collection of Apples from Mr. Dunn a very neat card is employed which gives useful information regarding the season of the variety, quality, style of tree, stock, &c. The fruit itself in this case suffered greatly in transit, but the idea of labelling is an excellent one for meetings of this character; indeed, if it were carried out at ordinary competitive shows their interest and usefulness would be materially increased. At the first Apple Congress forms of a similar character were supplied to the exhibitors, and much of the information thus secured was embodied in the admirable official reports subsequently issued. The Committee will no doubt be able on the present occasion to add considerably to the facts recorded both in the Apple and Pear reports, and any kind of election based on the reduced lists of select varieties will possess much practical value. At the same time the individual selections will be of especial local interest as indicating the varieties that have proved most reliable in each particular district.

We cannot give details of the classes or varieties this week, but the following are some of the principal exhibitors, and we hope to refer again to the best collections for which commendations or some other suitable recognition will be awarded by the Committee. The leading amateur exhibitors are the Messrs. Rothschild, Gunnersbury Park, Acton (gardener, Mr. Roberts); A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. Cummins); the Earl of Warwick, Warwick Castle (gardener, Mr. Christie); Mr. J. Rust, Eridge Castle Gardens, Tunbridge; Mr. J. Grex, Normanton Park Gardens, Stamford; Rt. Hon. Sir T. D. Acland, Kellerton, Exeter (gardener, Mr. Garland); the Duke of Newcastle, Clumber, Worksop (gardener, Mr. Gleeson); W. E. Brymer, Esq., Ilsington House, Dorchester (gardener, Mr. Powell); H. M. Middleton, Esq., Bradford Peverill, Dorchester (gardener, Mr. Gallop); the Earl of Ducie, Tortworth, Gloucester (gardener, Mr. Shingles); H. A. Brassey, Esq., M.P., Preston Hall, Aylesford (gardener, Mr. Waterman); Lady Frances Fletcher, Kenward, Yalding (gardener, Mr. R. Smith); Sir R. Sutton, Bart., Benham Park, Newbury (gardener, Mr. J. Howe); Peter Thellussen, Esq., Brodsworth Hall, Doncaster (gardener, Mr. W. Chuck); J. R. Rolls, Esq., The Hendre, Monmouth (gardener, Mr. Coomber); W. Roupell, Esq., Harvey Lodge, Roupell Park; H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton (gardener, Mr. Hudson); Mr. W. G. Pragnell, Sherborne Castle Gardens, Dorset; and Mr. Sidney Ford, Leonardslee Gardens, Horsham.

The principal trade exhibitors are Messrs. J. Veitch & Sons, Chelsea; G. Bunyard & Co., Maidstone; T. Rivers & Son, Sawbridgeworth; J. Cheal & Son, Crawley; Wm. Paul & Son, Waltham Cross; R. Veitch and Sons, Exeter; Dicksons, Chester; T. Bunyard, Ashford; H. Lane and Son, Berkhamsted; C. Turner, Slough; C. Lee & Son, Hammersmith; Paul & Son, Cheshunt; J. Watkins, Pomona Farm, Hereford; C. G. Sclater, Exeter; Lucombe, Pince & Co., Exeter; W. H. Frettingham, Beeston, Notts; J. Jefferies & Son, Cirencester; Saltmarsh & Son, Chelmsford; Laing & Sons, Forest Hill; and Peed, Norwood.

On Tuesday the opening ceremony took place at three o'clock, in the conservatory, when Sir Trevor Lawrence, Bart., M.P., delivered an inaugural address to the exhibitors and about fifty visitors. He said that, as President of the Royal Horticultural Society, he had great pleasure in declaring the Exhibition open. He was not entitled to express any opinion upon the subject of fruit cultivation, but he knew that a great amount of interest had been brought to bear upon the question, in some measure due to observations made by gentlemen occupying positions in the political world who were possibly very much at a loss for a subject upon which to speak. An address was delivered recently on the subject of fruit-growing, but those people spoken of as having made £5 a year out of twenty chickens or a patch of Strawberries might be a little disappointed if they tried the experiment. Nor was it to be expected that in the cultivation of fruit they would find the panacea for the trouble which has been afflicting the agricultural classes. The utmost that could be expected was that it would afford some assistance by increased intelligence and skill. So long as we continued to import fruit to the amount of £6,000,000 or £7,000,000 a year people would quote the fact as an evidence of what might be done in this country; but it should not be forgotten that a very large proportion of that amount represented fruit which could not be grown in this country. Since he had been in the gardens of the Society he had asked two authorities what they thought on the subject of cultivating Apples and Pears for profit. One of those gentlemen told him that after the care expended upon them and the cost the profit would not be more than 6d. per sieve, but the other said he was certain that for all the hardy fruit that could be grown in this country a good market could be found. When these fruit Shows were held an attempt was made to collect every description of known Apples and Pears with a view to getting rid of those which were of little value, but the present Conference proposed to invite the cultivation of such only as found favour and might be worthy of cultivation. The object of the Conference was therefore a practical one, and the Exhibition, having regard to the bad season, must be considered as satisfactory. One point of great importance was undoubtedly the question of railway rates, and in regard to the step which had been taken in the matter, he thought the Legislature had acted wisely in deciding that preferential rates should be considered and revised by the Board of Trade, because all were painfully aware how the railways had had the monopoly of the means of transport in this country. As a result of the Conference, attacks had been made upon the nurserymen. It was said that they kept a large quantity of worthless Apple and Pear trees, and no doubt such was the case, but they did not represent the bad as good. He was quite certain with regard to the cultivation of hardy fruit that care and intelligence were of much more importance to the result than climate. An evidence of this was to be found in the fact that at the

former show some of the best exhibits came from the north of Scotland.

On the motion of Mr. Shirley Hibberd, seconded by Mr. Cheal, a vote of thanks was accorded to the Chairman and the Council, who, in responding, called attention to the fact that the exhibits on this occasion were much more carefully named than in 1883 and 1885, which showed that the people were beginning to understand their business better. The Show was then formally opened to the public.

On Wednesday the Conference was opened at 1.30 P.M., Dr. R. Hogg in the chair, when after a few introductory remarks, the following papers were read:—

APPLES FOR PROFIT.

By Mr. George Bunyard, Nurseryman, Maidstone.

The commercial growth of Apples for market is frequently entered upon in a wrong manner, because many start into the enterprise without sound information. Beginners fight shy of the growers of trees for sale under the unfair notion that they would recommend those kinds of which they held a stock; they then procure the "tip" from the salesmen in the various markets, who, as far as they can (and in good faith), give them the names of the kinds that sell well, fruits, so to speak, which dispose of themselves by their names or appearance. Many of the choicest Apples produce but a small crop, or are so long in coming to a state of profitable production that planters get discouraged, others are recommended which are very slow growers or rarely make good orchard trees, and thus land is not fully utilised. As the markets are supplied from a large area, the salesmen have but a general idea of the suitability of sorts to a district, and hence much valuable time is lost. In the short time at my disposal I propose to give a few hints as to the formation of a profitable Apple orchard or plantation, where the return shall be speedy and yet in the future for a century shall promise a good result. The first operation is the procuring of suitable land. In a district where little fruit is grown, an idea can be gained from the growth of the few fruit trees in the cottage gardens, and perhaps the orchards near gentlemen's seats. If the Apples show a kindly and clean growth, with an absence of lichens and canker, and if Elm trees flourish it will so far be favourable. Exposure to prevailing winds is to be avoided either by shelter planting, or better still by taking advantage of existing woods or hedges, and a slope to the south or west is to be preferred, but in order to secure a permanent orchard care must be taken to get deeply cultivated or rich deep soil, or a few years of fertility will only be the precursor of decay and disappointment.

Having settled on suitable land, the tenant or purchaser next proceeds to put the land in order for planting, either by steam cultivation or by thorough digging or trenching. The latter, though expensive at the start, is of permanent benefit. This operation is best done before the frosts set in, that the land may be purified and sweetened by exposure. The ground should then be set out, and standard trees, on the Crab or free stock, of the following sorts, planted 24 feet apart; requiring seventy-five to an acre.

Apples for Standard on warm loamy soils.

1, Dessert; to pick and sell from the tree.

August.	September.
Devonshire Quarrenden.	Lady Sudeley.
Sugar-loaf Pippin.	Yellow Ingestrie.

2, To store October to Christmas.

King of the Pippins.	Cox's Orange Pippin.
Mabbott's Pearmain.	Blenheim Pippin.

3, Kitchen Apples to sell from the tree August and September.

Early Julien.	Keswick Codlin.
Lord Suffield.	Duchess of Oldenburg.
Councillor.	Grenadier (true).
Ecklinville Seedling.	

4, To store October to December.

Warner's King.	Golden Noble.
Schoolmaster.	Tower of Glammis.
Lord Derby.	Waltham Abbey.

5, To keep from January to May.

Wellington (Dumelow's Seedling)	Lady Henniker.
Winter Queening.	Bramley's Seedling.
Norfolk Beefing.	Annie Elizabeth.

If the soil is cold but rich, omit Suffield and add Lord Grosvenor, and omit Cox's Orange and King of Pippins.

So far for the top crop, the space between being utilised by placing three two or three-year-old dwarf trees between each standard, others at 6 feet apart, which, less seventy-five for standards, will be 1135 per acre until the plantation is filled up. These dwarfs will produce the best fruit from trees on the Paradise or surface-rooting stock, and may consist of the following.

Apples for Bush or Free Pyramidal Style to be Grown on Paradise Stocks.

6, Dessert kinds to sell from the tree.

7, Early.	September.
Gladstone.	Col. Vaughan.
Red Juneating.	Duchess' Favourite.
	Worcester Pearmain.
	Duchess of Oldenburg.
	Yellow Ingestrie.

8, To store for sale October to February.

Cox's Orange Pippin.	Gascoyne's Scarlet.
Cox's Pomona.	Beauty of Kent.
Peasgood's Nonesuch.	Baumann's Reinette.

If the soil is cold omit Cox's Orange and Worcesters, and if very rich and good warm land, add Adams' and Hubbard's Pearmains, Ross Nonpareil, and Gipsy King, while for very late keeping, Golden Knob, Sturmer Pippin, and the smaller fruit of Dutch Mignonne are useful.

9, Kitchen Apples of large size to sell from the tree (on dwarfs).

Lord Grosvenor.	Golden Spire.
Ecklinville Seedling.	Grenadier.
Manks Codlin.	Councillor.
Pott's Seedling.	Loddington.
Stirling Castle.	Small's Admirable.
The Queen.	

10, Fine kitchen Apples to store (on dwarfs):—

Lord Derby.	Lane's Prince Albert.
Murfitt's Seedling.	Bismarck.
Winter Peach.	Dutch Mignonne.*

In six years' time the trees immediately beneath the standards can be transferred to other land, and will if removed with care (in October or early in November), suffer little from lifting, and in the second year will produce heavy crops. After the sixth season the orchard should be left with a permanent crop of dwarf Apples, and standards at 12 feet apart. The dwarfs at some future time could be cut away and the standards, which would then be established and strong, should be laid to grass, and thus fodder for sheep keep and a top crop of Apples could be secured annually. Until the 6-feet trees cover the land Potatoes may be grown between the rows, or Lily of the Valley, or Daffodils. But if land is cheap the space may remain without a crop, and the roots will benefit greatly from the run of all the land. Weeds must be kept down. If standards only are planted no corn crop must be taken, but in this case soft fruit may be placed beneath them. The plantation should be dug in December or January each year, and be knocked over with a prong hoe in March.

Oxen and horses should not be allowed in young orchards. Shelter can be quickly obtained by planting Damsons or Bush Plums (the latter a Kent sort) with Crawford or Hessle Pears as an inner line at 12 feet apart, and this screen would pay its way. If desired, Plums could be placed between the Apple standards, and Gooseberries and Currants, omitting the dwarf Apples. If the land is properly prepared the Apples should need no manure for some years, as the use of stimulants while the trees are young is prejudicial by inducing a sappy unripened growth, which lays the tree open to damage by frost. When the trees are carrying a heavy crop, mulching may be carried out in June, or liquid manure can be used with advantage in the growing time. Such a plantation as described would commence to bring a return from the dwarfs in two years, and the fruit with a little care in thinning would command a ready sale, because when grown in this manner it is cleaner in appearance and much larger in size. In three or four years the standards would commence to fruit, and a much larger return would annually be made, and if properly managed, at the end of fourteen years, the crop would buy the fee simple of the land outright.

In order to make the highest prices, all fruits should be "graded," as the Americans say, and be of an even sample throughout, be properly named, and packed carefully, so that the baskets open clean and bright at the market. In the case of choice dessert kinds it would probably pay to pack them in light card boxes, such as those introduced by Mr. Tallerman for Cherries, &c., and manufactured by Messrs. Johnson. In fact, we should take a leaf out of the French books, and put up our produce in an attractive form. The pruning of the Apples in February or March is of the simplest. No Apples should be pruned the first year of

* The list of fruits given is more extended than is advisable but it may only be possible to obtain a part of the sorts given in the planter's locality. The fewer kinds used the better.

planting. For the first two years commence to form the standard trees by taking out all the inner wood to attain a bowl shape, and cut back the young growth to four or six small eyes, to a bud pointing outward ; the fourth or fifth year shorten the wood of the current year to 6 or 12 inches, and keep the centres clear, and after that time let them grow as they like, merely shortening the tips to procure an evenly balanced head, and taking out any crossing pieces of growth. The dwarfs can be cut in to form pyramids or basins, as desired, for two years, and after that be allowed to grow freely. Other matters, such as securing the limbs in a heavy crop, and staking the standards, will have to be attended to, and the stakes must be removed from the standards in the winter as soon as the trees can do without support, as the ties are apt to cut into the bark and produce canker.

For Apple growing land need not be contiguous to a railway station, as they will travel well if carefully packed. Storing enables a grower to realise a high price at a time when good Apples are scarce ; where proper stores, such as the Hop oasts of Kent do not exist, a frost-proof shed will do, and if care is taken to store all sound fruit a thick covering of straw will effectually exclude frost and keep the fruit plump and heavy. If 1100 trees bore half a gallon each at three years old the crop would be about 70 bushels per acre, which at 4s. nett (carriage and salesmen's charges deducted) would give a return of £14 per acre ; at five years one gallon each would double the produce, and so on. When the top and bottom crop come to pick an average of half a bushel per tree would give a return of about £120 per acre. The risk of loss by wind is small with dwarf trees, and the cost of picking is less than in tall trees, and they can be readily thinned and attended to.

A word as to old existing orchards. My text is—Woodman spare that tree. If such old trees are well manured in two years they would be either producing good fruit, or, if cider Apples, they would so benefit from the improved culture that they should pay for regrafting with superior kinds. I believe much may be done in this way, as the roots soon respond to generous treatment, and the foundation of success rests upon them. Suitable kinds for grafting old trees would be Loddington, Lane's Prince Albert, Small's Admirable, the new and splendid Bismarck, or the smaller dessert Apples, such as Duchess's Favourite and Yellow Ingestrie.

FRUIT CULTURE FOR PROFIT IN THE OPEN AIR IN ENGLAND.

By Mr. William Paul, F.L.S.

I THINK I may safely assume that a much larger quantity of English fruit would meet with a ready sale if put before the public in a tempting state. I think I may also assume that there are thousands of acres of land in Great Britain at present bringing little or no profit to owners or occupiers, which, if planted with fruit trees, might be made to return a good profit to both. Not that I think large fortunes are to be made by the venture, but a fair remuneration for the outlay of capital and the application of industry and skill.

To give these opinions a practical application, I propose to say a few words on the subjects under the following heads :—

1, Climate.	2, Soils.
3, Holdings.	4, Sorts.

1, Climate.—A mild equable climate free from sudden changes of temperature and storms of wind or rain should be taken in preference. I do not believe in planting Apples, Pears, Cherries, and Plums in the bottom of valleys. This is often done on account of the quality of the soil. But it is of little benefit to the grower to realise a good growth and abundant flowering if his crop is destroyed in the flowering state by the spring frosts. Over the last few years there has been a wonderful show of blossom on the fruit trees in the Valley of the Lea, but little fruit has followed owing to the destruction of the embryo by the severity of the spring frosts in this low situation. This is the one point in climate that would seem to render it unsuitable for culture for profit, as it can be but partially amended by shelter or any other means.

It seems to me that many important points desirable to secure success, which are well known to those who are thoroughly versed in these matters, have not yet taken hold of the general mind, and they cannot be too often repeated till they do this. Only a few years ago I was surprised to meet with an orchard newly planted in the bottom of a moist valley, the climate of which in spring was trying in the extreme for early buds and blossoms. The sorts, too, were indifferently chosen. Nevertheless the planter persevered with their culture, until he found for three or four years in succession he got plenty of blossom but little or no fruit. He has recently destroyed them and cropped the ground with vegetables. But what a waste of time and money, and what a source of vexation and disappointment.

I believe in planting on slopes or uplands, where the spring frosts are less destructive, with distant shelter to be provided, if not already existing. If cheap, quick-growing trees are planted for shelter within a few yards of the boundaries of the plantations, at the time young fruit trees are planted, the former will afford the necessary shelter by the time the fruit trees come into bearing.

On a farm of 200 acres there may be a difference of climate that would render fruit culture profitable or unprofitable, according to the position in which the trees are planted. In the Valley of the Lea I find that in some years the crop is mainly or wholly on the bottom, and in others on the top of the trees. This I attribute to the frost being more severe in the one case near the ground, and in the other at a greater elevation during the period of flowering.

2. Soils.—A light or medium loam of good depth and well drained is generally accepted as the most favourable for the production of an abundance of good fruit. It matters not if it be poor, provided manure can be obtained at an easy distance or at a cheap rate. A bad soil in a good climate often yields the grower more profitable results than a good soil in a bad climate. If the ground be wet, thorough and deep drainage is an essential condition of land to be employed in fruit culture, for it improves the climate as well as the soil. Chalk or gravel would seem to be a better subsoil than clay, as the latter, especially if wet, favours the development of canker.

As to soils for the different fruits I would prefer for Apples a medium loam ; for Plums, Pears, and Cherries a light warm loam. For Strawberries a light rich loam, cool and moist, with ready access to water. For Raspberries a deep, light loam, also cool and moist. For Gooseberries and Currants a deep, strong loam. But I would not convey the impression that these soils are necessary ; in well-drained soils cultivation may be safely extended even to strong or clayey loams.

Of course, the working of the soil is, or should be, much more costly than in ordinary farm operations, and the cultivation of the trees by pruning and keeping free from insects is also an item of cost in labour which must not be lost sight of. In estimates of profits lately put forward it appears to me that these facts in connection with the cultivation of trees and soil have not been sufficiently allowed for.

3. Holdings.—It is often said one should not plant fruit trees for profit except on his own land. But this would unnecessarily limit the number of growers. A long lease, however, is indispensable. According to calculations I have made, but with which I need not trouble you, thirty years is the shortest lease I should advise anyone to plant under. If the lease be for a shorter period I think the tenant should expect from the landlord either a renewal at the same rent as before, or that his trees be taken at a valuation.

It may be thought by some that this is asking too much from the owner of the soil, but I do not think it is more than it is his interest to concede. By such concession he may secure a good tenant and a good rent, and there is ample security for his rent in the value of the trees on the soil. I will read a brief extract from a recent number of the *Sussex Advertiser* in reference to land tenure in Kent, and without offering any opinion on the course taken by the tenant, as I know nothing of the case beyond what is here stated, I think you will all agree with me that such a state of things is to be deplored.

"Land Tenure in Kent.—One of the results of the unsatisfactory system of land tenure now prevailing in this country is to be seen at Knockholt, Kent. The lease held by Mr. Edwin Bath of Curry Farm, in that parish, expires at Michaelmas, and he is not allowed to renew his tenancy, nor can he recover compensation from his landlord for a valuable plantation of thirty acres of Raspberries on the farm. Consequently, the extraordinary spectacle may now be seen of a reaping machine cutting down and a steam plough following it rooting up this plantation, which has cost a large expenditure of time and money to produce. When it is considered that the produce of the plantation in question realised in the present year upwards of £1690, and that the plantation was vigorous and in full bearing, some idea may be formed of the sacrifice of property involved."

Further : It has often struck me that the manner in which the charges on land are levied is not equitable, and is calculated to discourage rather than encourage the planting of fruit trees for profit. A few words will, I think, make this plain. A man plants fruit trees not looking for any quantity of fruit for four years. During that period he receives nothing, or next to nothing, in the shape of produce, although rent charges on land and expenses of cultivation are going on and have to be met. Then when his crop brings him a larger return than ordinary

farm produce would bring, the charges on the land are raised! Now it would seem only fair if the charges on land are calculated according to value of the annual crop the planter of fruit trees should pay nothing for the first four years.

4, SORTS.—Of large fruit grown for profit Apples would seem to stand first, Plums next, then Pears, then Cherries. Of small fruits, Strawberries, Raspberries, Currants, and Gooseberries are the most important; Filberts may also be planted to give a profitable crop in odd sheltered spots where other fruits would not grow well. But these different fruits do not all require precisely the same climate and soil. The Apple is perhaps the least particular in these respects, some varieties of which will thrive and produce large crops of good fruit in almost any well-drained soil when grafted or budded on the Crab or Apple stock. The Paradise stock I have found next to useless under field culture on the clayey soils of Sussex. There are fifteen sorts of Apples which I should plant in preference to others in my own county (Hertfordshire), having an eye to the disposal of the crop as well as to its production. They are—Blenheim Orange, Cox's Orange Pippin, Cox's Pomona, Devonshire Quarrenden, Ecklinville, Duchess of Oldenburgh, Irish Peach, Keswick Codlin, King of the Pippins, Lord Suffield, Small's Admirable, Stirling Castle, Sturmer Pippin, Warner's King, and Wellington.

I can speak favourably of the Ecklinville from experiments made both in Herts and Sussex. I planted in Sussex four years ago 200 Ecklinville Apples that had been cut back as maidens to 2½ feet. The soil (a quarter of an acre) was good, and had been subsoiled 18 inches deep a few years previously. They grew well. The third year they produced 5 bushels, the fourth year 17 bushels, which sold on the ground 5s. per bushel. They were planted about 6 feet by 6 feet, but strong growers might be planted 9 feet by 9 feet, and small fruits or vegetables might be grown between the trees for a few years. I estimate the expenses of planting and cultivating these 200 Ecklinville Apple trees on a quarter of an acre of ground in 1884 as follows :—

Cost of trees, 200 at 50s. per hundred	£5	0	0
Planting and digging	0	15	0
Four years' cultivation, at 15s. per year	3	0	0
Rent, rates, &c., at 10s. per year	2	0	0
	£10	15	0

Returns in 1888 :—

Twenty-two bushels of Apples sold on the ground, at 5s. per bushel	£5	10	0
	£5	5	0

Next year I expect to get the outlay back, and look to the future for profits.

In exposed situations pyramid or bush trees are preferable to standards, because the fruit is not so liable to be blown down, and in large orchards, if the trees have stems 2½ to 3 feet, sheep could run under them to feed, and thus help the returns.

PLUMS.—The Early Prolific, Early Orleans, The Czar, Belgian, and the Victoria are good ones. Purple and Pershore Damsons also, of which the Farleigh is well to the front, are usually a profitable crop.

PEARS want a better climate and a warmer, richer, and deeper soil than Apples, and are not usually so profitable a crop as Apples. They do well as a rule on a subsoil of chalk. Of Pears, Aston Town, Eyewood, Hessle, Williams' Bon Chrêtien, Beurré de Capiaumont, and Beurré d'Amanlis are the most profitable sorts to grow in Hertfordshire; Louise Bonne of Jersey, where it will grow, and Marie Louise, where it will bear freely, are also good varieties.

CHERRIES like a lighter and deeper soil than Apples. The May Duke, Bigarreau, Napoleon, and Kentish are good sorts.

STRAWBERRIES.—Vicomtesse Hericart de Thury, Sir J. Paxton, Elton Pine, President, Sir Chas. Napier.

RASPBERRIES.—Carter's Prolific, Fastolf.

CURRANTS.—Black Naples, Lee's Prolific, Red Dutch.

GOOSEBERRIES.—Whitesmith, Warrington, Crown Bob, Lancashire Lad.

In selecting sorts of fruits it should not be lost sight of that some sorts flower later than others, and the blossoms of some sorts are more frost proof than others, and thus the crop is often saved by late-flowering or frost-resisting blossoms. If I were about to plant fruit trees for profit I should look closely to these matters in the selection of sorts. I would also examine all the fruit trees and talk to all the practical gardeners in the neighbourhood whom I could persuade to listen to ascertain which sorts produced the best and most certain crops in the district.

In conclusion, let me say that the grower's work is only partly done when he gathers his crops. He has to sell them. Like other men of business he must be sufficiently intelligent, industrious and energetic to find the best market for them, and to pack them properly, if packing is needed, or he misses the reward of his skill and labour.

DESSERT PEARS.

THE FEWEST NECESSARY TO SUPPLY RIPE FRUIT FROM AUGUST TO MARCH.

By MR. W. WILDSMITH, HECKFIELD, HANTS.

THE subject of this paper was suggested to my mind by the controversy anent the reduction of the varieties of fruits—Pears in particular—that took place in one of the horticultural journals a few months since. The general tone of that discussion went to show that there was a unanimous feeling in favour of reducing the number of varieties, but to what extent opinions differed greatly, twelve being suggested by more than one writer as the maximum number of varieties, a proposition that in some respects I had a good deal of sympathy with, but the number twelve ended so far as I was concerned simply because I knew from years of experience that no twelve kinds that could be named by the greatest expert in Pear lore would suffice to give an unbroken succession of ripe fruit throughout the Pear season, say from beginning of August to middle of March. That twelve kinds might be selected that would extend over the Pear season is quite another matter. I have long had the honour to serve an employer whose favourite fruit is the Pear, and consequently have had to give special attention to it, and if one point more than another has had to be studied it is that of quality, a solitary flavourless fruit of an otherwise good variety has not unseldom been the cause of the condemnation of the variety generally. I name this to show that my experience has been gained at some cost of labour and anxiety, and at the risk of being considered egotistical I think this entitles me to speak with some degree of confidence anent this matter of limitation of sorts. Every fruit grower knows how precarious and how variable the Pear is in different soils, aspects, and positions, and no twelve kinds, however good they may be in one garden or district, will be equally so in another, even but a mile or two away, nor even in the same garden can they be relied on to be of the same excellence any two consecutive years, and it is this precariousness that I think renders it necessary to grow a goodly number of varieties. For the purpose of this paper I have closely examined the Pear notes in my diary for several years, in which is noted date of gathering, of ripening, and duration—*i.e.*, time they continued fit for table, and from these notes I have compiled a list of twelve that, supposing I was compelled to grow only that number of kinds, would be likely to give me the most regular (not constant) succession of fruit. They are placed in the order in which they ripened here. Williams' Bon Chrêtien, Fondante d'Automne, Beurré Superfin, Marie Louise, Thompson's, Doyenné du Comice, Glou Morçeau, Winter Nelis, Josephine de Malines, Huyshe's Victoria, Easter Beurré, and Bergamotte Esperen.

These twelve constitute the cream of all the varieties (nearly one hundred) that are grown here, and out of the twelve there are but two that are at all liable to prove of doubtful quality, and this from a cause over which we have no control—namely, a sunless season. The two kinds in question are Easter Beurré and Bergamotte Esperen, both of them late varieties, and requiring a longer season of sunshine than the others. I may, however, add that I have occasionally in a sunless season had recourse to means that has tended to make both of the kinds palatable—namely, by wrapping the fruit separately in tissue paper, and placing them in shallow baskets in a dry warm room for ten days or a fortnight before the fruit were required for use. And now with respect to the question of the number of varieties "necessary to ensure a continuous supply of ripe fruit." I have, after considerable deliberation, founded on the practical experience of many years, come to the conclusion that it is next to impossible to accomplish the feat with a less number than twenty-five varieties. To some this number may appear excessive, and to such I ought to explain that my experience is given from the standpoint of a private gentleman's gardener—say of a large garden—and from which liberal supplies of Pears are demanded the season through, and therefore it is necessary to have, as it were, two strings to one bow; as, for instance, if Williams' Bon Chrêtien Pear run short, I ought to have Beurré de l'Assomption to supply the lack; or if Marie Louise be scarce, I must eke out with Beurré Bosc, and so on, to the end of the chapter.

I regret that I have not practically tested with how few it is possible to keep up a constant supply, but I am sure I should fail if I undertook the task with a less number than twenty-five, and the following are their names, and placed in order of ripening :—Souvenir du Congrès,

Williams' Bon Chrêtien, Beurré d'Amanlis, Fondante d'Automne, Louise Bonne of Jersey, Madame Treyve, Beurré Hardy, Beurré Superfin, Seckle, Marie Louise, Doyénne du Comice, Thompson's, Duchesse d'Angoulême, Glou Morçeau, Winter Nelis, Comte de Lamy, Beurré Bachelier, Josephine de Malines, Winter Crassanne, Huyshe's Victoria, Olivier de Serres, Easter Beurré, Nec Plus Meuris, Knight's Monarch, and Bergamotte Esperen. All these are generally well known varieties in most parts of Britain, proof sufficient, I think, of their excellence; and I can vouch for their reliability for this district in respect of constant and free bearing and their high quality.

The least meritorious in the list are: —Madame Treyve (quickly over), Duchesse d'Angoulême (gritty), Beurre Bachelier (mealy), and Nec Plus Meuris (also gritty), yet I know no other four kinds that can—all points considered—replace them. Lest anyone should conclude from what I have said as to the number of kinds to insure a regular succession of useful fruit that is all that is required to make certain of the supplies, I will undeceive them at once by saying no. There is no fruit that gives better returns for labour expended, and none that more quickly resents the "let alone" policy that one is occasionally compelled to behold. As regards the former, nearly all our trees are grafted on the Quince, from which stock it is no exaggeration to say that we get at least double the fruit that we do from trees on Pear stock, and high feeding is therefore a matter of necessity; but then the labour of applying these manurial mulchings we place as a set-off against that of the time expended in root pruning, that nearly all trees on Pear stock require about every alternate year, and the fruit is neither so numerous nor so well coloured, and not superior in quality. No, if good crops of fruit are expected annually water and mulch, mulch and water, must be the order of the day all through the fruit-swelling season. Those that must by reason of restricted space grow only a few varieties, and whose demands for fruit are, as a matter of course, proportionately restricted, may do something towards lengthening out the supply of ripe fruit by gathering the same variety of Pear at varying intervals of from a week to ten days. The fruit of most varieties—more especially the earlier kinds—will then ripen at similar intervals, and thus the season of ripe fruit be considerably extended. To those that have unlimited room, and can therefore grow the required number of varieties to insure supplies, this piecemeal gathering is not of so much consequence, nevertheless, I strongly advise its being done with any varieties that ripen rapidly, such as Citron des Carmes, Jargonelle, Williams' Bon Chrêtien, and Fondante d'Automne.

ON PRUNING.

By Mr. Shirley Hibberd.

It is commonly asserted in the books, and forms part of the faith of mankind, that pruning tends to augment the vigour of trees, and as a consequence much of the pruning that is done has in view to promote the end predicated for it. There can no longer be entertained by observant men a doubt of the fact that pruning, so far from augmenting, actually diminishes the vigour of the subjects operated on, and the one sole reason that the fact is not strikingly illustrated in the outdoor world is that Nature is generous, and accomplishes much in compensation for the injuries that are inflicted by the pruning knife. And because Nature is generous and compensative, a certain amount of pruning may be done without harm, and, as regards the objects we have in view in pruning fruit trees, with positive benefit. But so long as we keep in mind that pruning in the abstract is objectionable, we shall be careful to prune in a way to ensure a maximum of the advantage for ourselves, with a minimum of disadvantage to the trees.

Keeping this in mind, we may at once compare the several forms of trees with a view to arrive at conclusions as to their relative values. For the present we will compare the standards, the pyramids, and the bushes. We must deal with them generally, and make broad comparisons, for particular cases would require particular consideration that would be scarcely possible in connection with this Conference.

We will begin with standard orchard trees that bear abundantly, as many orchard trees do. It will be observed that pruning neither augments the vigour of the trees nor does it promote their fruitfulness, for as, generally speaking, they are not pruned at all, they teach a bold lesson of the non-necessity of pruning. Now we will turn to the perfect pyramids, say of Apples and Pears, formed to an ideal model by long years of pruning and pinching. As pyramids they are perfect, being of even contour, dense with foliage, with scarcely room anywhere to allow one to thrust a hand in, and they are healthy and bright from the ground line to the summit. It has to be remarked of these compact leafy trees that they produce so little fruit as but rarely to pay a fair return for the land they occupy. They do, indeed, occasionally present their owner with a crop, and often he is satisfied. But if we are to take measures for increasing the production of fruit we shall rather avoid than accept trees of this form, or if we must have them we shall, having fruit in view, rather promote an open growth with room to thrust one's head in at many places, this form of tree being favourable to fruit production. We have in our collections many kinds of Apples and Pears that will not, no matter what we do for them, conform to our ideal of the perfect pyramid. It is usual, therefore, to suffer these to grow as open loose bushes, and the difference between them and the pinched pyramids is seen not only in the form and furnishing, but in their superior fruitfulness.

Pursuing the comparison, it will be observed that pruning tends to promote secondary growth that often is immature when the season closes. This growth, therefore, has been obtained by a false system, and its uselessness is a proper commentary on the violence done to Nature. The perfect pyramid is for ever loaded with immature wood that earns nothing, and the density of the foliage so completely excludes the light and air from the wood that fruit spurs are few and commonly unproductive. The free bushes that are not pruned at all, or but moderately pruned, are, as a rule, vastly more fruitful than the pyramids, and the free standards are more faithful than either. Thus, as a matter of fact, the order of fruitfulness is in an inverse ratio to the order of the pruning, and we may conclude that the pruning knife is a deadly enemy to Apples and Pears.

The natural growth of a fruit tree is definite and orderly, but much of our practice appears to proceed on the hypothesis that it is a matter of accident. There is sent forth a certain number of long rods. If these are cut back secondary rods appear, and by stopping these we obtain a lot of soft spray, and so on for ever. But the long rods left to themselves throw out a few side branches and form fruit spurs the greater part of their length. In due time the fruit appears. Often, where the soil and climate favour the business, and the varieties are naturally freebearing, the fruit may be seen to hang like ropes of Onions, while at the same time pruned trees of the self-same sorts are thinly dotted with fruit, so that we can actually count them, which in the other case is impossible. The unpruned standards and bushes are free to follow the course of Nature, and we see them fruiting abundantly and frequently, while the pruned trees fruit scantily and seldom. The obvious lesson is that long rods admitting light and air freely are more serviceable than rods systematically cut back, and thereby compelled to become densely furnished, forming compact trees impervious to light and air, as compared with the free trees, that delight to display their fruits in the fullest exposure. The leading shoots, therefore, should never be shortened except for some special reason.

In the year 1876 I had the honour of reading before the Society of Arts a paper on "Fallacies in Fruit Culture." One of my objects was to demonstrate that systematic pruning and pinching of open ground fruit trees deferred and limited the production of fruit, although these operations were intended to hasten and augment fruit productio And I placed before the meeting for inspection and criticism a number of trees that I had in the first instance selected for their ugliness, but which, having for some years occupied a good soil in a suitable situation, had acquired symmetry and proportion and fruitfulness without aid from the pruning knife, one great point in the business being that every annual growth had been allowed to acquire maturity, no secondary growth being promoted by summer pinching, and no superabundanee of furniture resulting from winter pruning. Some of you will remember that in doing this I exposed myself to what I may now recall as a shower of hot shot; but I live still, and repeat the story, and if another dose of hot shot is ready for me I will not flinch so much as to move my eyelids, so sure am I that common sense will at last prevail, and that it will be agreed all round that Nature has something to do with the production of fruit.

I have the consolation, however, of knowing that common sense has prevailed. The horticultural papers altered their tone on the subject of pruning from that date; practical gardeners who lead by intelligence and example saw and acknowledged I was right, and to their advantage they have used the knife less freely than formerly. Moreover, since the year 1876 we have had a succession of Apple and Pear Conferences, and their collective lesson appears to be *Magna est veritas et prevalebit.* for have we not entered on a new career in fruit culture, common sense guiding the way? because only where common sense prevails does Nature prove herself in every sense the friend of man. While we repudiate reason Nature destroys our false work, and does not even stop there, for she destroys man himself, and history is in great part the record of

the price that man has paid for adherence to unreason, superstition and folly.

Amongst the many persons who have carried out my proposals I will name Mr. James Hudson, the gardener at Gunnersbury House, who is known to you, and whose work is near at hand. He had long lamented the unfruitfulness of a collection of good varieties of dessert Pears, but he saw no way to improve them but to continue the practice of pruning. He saw my sample trees in 1876, and from that time he allowed the trees to manage their own affairs, since when they have been constantly and abundantly fruitful. Mr. J. James, then gardener at Redlees, took a similar course and secured equally happy results. In this garden of the Royal Horticultural Society you may see collections of pyramid Pears that have been systematically summer pruned for any number of years, and have borne moderate crops intermittently. But you may also see a collection of Apple trees in the form of free bushes that have only been lightly winter pruned to keep them somewhat in order, and they have been constantly and abundantly fruitful, and, in fact, have every year for several years past illustrated my idea of fruits displayed like ropes of Onions. In the famous garden at Calcot near Reading, where the late Mr. Richard Webb had every year finer crops of fruit than, probably, could be found in any garden of similar extent in all the home counties, there was absolutely no pruning practised; the trees never made more than a moderate growth, though in land of great strength, and the fruit was of such quality that Mr. Webb took a high place in great exhibitions as well as in Covent Garden Market. When lately at Heckfield, Mr. Wildsmith pointed out some Pear trees under reverse training that proved more than ordinarily fruitful. This reverse training does not pay when it is carried out in a severe manner by the aid of the knife and a multiplicity of ligatures, for that system is a mere warfare against Nature, which can never pay. It is in this case practised in a coaxing kind of way; the trees know but little of the knife, and the long rods are brought down gently, as I suggested years ago in what I termed "pulley pruning." Many fruitful trees acquire a half-weeping habit from the mere effect of the weight of the fruit which brings down the branches. There is no merit in observing this, but there is merit in taking from the fact a lesson in cultivation. The reverse position of the branch checks growth, exposes the wood and the fruit most completely to the sun and the air, and we may say the mere fact of fruitfulness is promotive of fruitfulness, the half-weeping habit that the law of gravitation enforces on the tree exactly suits its constitution as a fruit producer. Very much of the prevailing practice in pruning promotes rigidity of growth, and compels the tree to be a mere leaf producer.

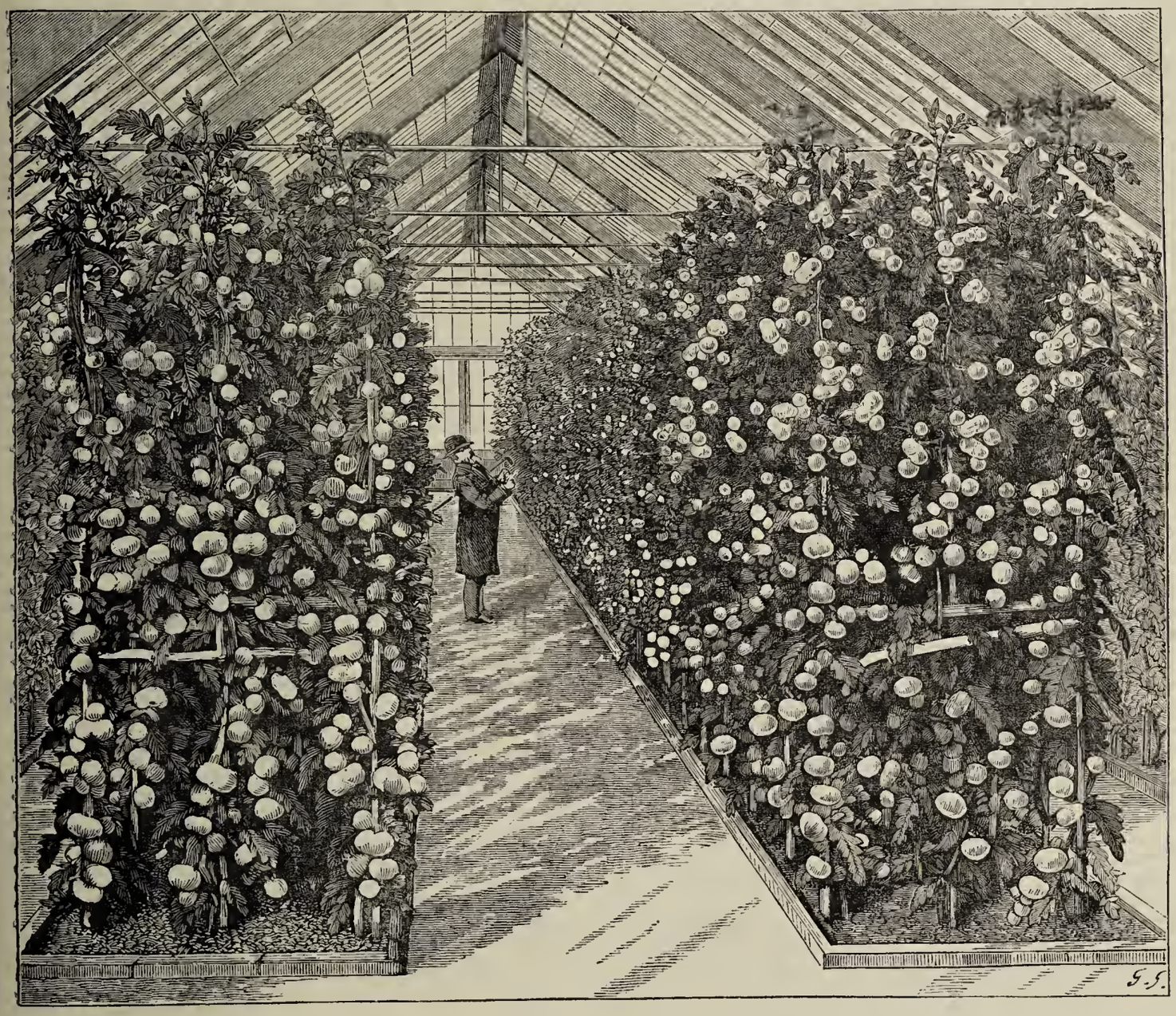


FIG. 41.—THE CHISWICK TOMATO HOUSE. (See page 351.)

Now to conclude. Observation and experience have taught me that summer pruning is too promotive of useless secondary growth to be advantageous; and it tends also to keep the roots in action until late in the year, when they ought to be at rest. The effort of the tree to ripen useless wood is detrimental to its more profitable duties. Prune immediately after the fruit is gathered, first cutting out all dead wood, then cutting out cross and ill-placed shoots that would interfere with

the free play of light and air, and then conceal the pruning knife lest anyone should venture to cut back the long rods, and so renew the old warfare between useless wood and useful fruit.

Pyramid trees of many sorts of Pears will acquire beauty of contour, and become regularly furnished, and will produce abundance of fruit without any pruning whatever, as I have shown by my trees that for fifteen years continuously were never touched with the knife. The lower branches of pyramid trees never bear fruit, probably from proximity to the ground and its exhalations, as well as from the low temperature that often prevails at that level. When left to form themselves, or aided in quite an infinitesimal degree, they remain open to light and air, and soon become well clothed with spurs that ripen perfectly and do their duty. The dense, leafy pyramids are useless in proportion to their leafiness, and very often it may be said that the free bushes and standards are useful in proportion to their leanness, and it must be owned that many of the lean trees are amongst the most profitable. Long rods pay, short rods are more plague than profit.

A most instructive contrast between the useless pyramids and profitable standards has occurred in the garden planted many years since by my friend, Mr. J. B. Saunders, then of The Laurels, Taunton, now of Teignmouth. Mr. Saunders was proud of his pinched pyramid trees, and managed them with orthodox care. They were but moderately fruitful, though models of form, and as handsome in leafage as Camellias. In the course of time, my friend having left Taunton, a portion of his beautiful garden, of which many of the pyramid trees were occupants, came into the possession of Mr. Godding, nurseryman, of that town. This gentleman soon discovered that the pyramids would never pay rent for the land they covered, and he determined that they should pay liberally, and cover no land at all. He cut them back to sheer stems of 7 to 10 feet or so, according to their form and stature, and allowed them to form free heads over the gravel walks. They have done this; he crops the borders under them to their very stems, and they arch over the walks, forming rustic bowers, and their fruitfulness is such that it is necessary to provide artificial support to save them from self-destruction. You have never seen pinched pyramids in the deplorable condition of needing artificial support.

Of wall and cordon trees I do not propose to say anything at this time, except that they must be amenable to common sense, and Nature must have some freedom even where the trees are so fettered. Of one thing I am satisfied, that any system of pruning that promotes a late summer growth is pernicious, for it is not in this climate that fruit trees can make and mature useful wood after the passing of Midsummer Day.



CHRYSANTHEMUMS IN THE METROPOLIS.

THE annual public display of Chrysanthemums in the Inner Temple Gardens, under the charge of Mr. Newton, will by the permission of the Benchers, be opened to-day (Thursday). The plants are looking very promising, and some of the earlier varieties are already in flower, but they will not be in their best condition before the end of the month. The Chrysanthemum Show in Finsbury Park, which for several years now has attracted so many visitors, will be opened on Saturday, October 20th. We had the pleasure of seeing the large stock of plants a few weeks ago, and they were then looking exceedingly well indeed; it seemed as if previous successes were likely to be surpassed this season. The collections at both places include examples of the best old and new varieties.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE usual autumn general meeting of members took place at Anderton's Hotel, Fleet Street, E.C., on Monday evening, the 15th inst., Mr. E. Sanderson, President, in the chair, among those present being Messrs. R. Ballantine (Vice-President), E. C. Jukes, C. Harman Payne, G. Stevens, Blake, R. Dean, G. Gordon, and many other leading supporters of the Society. The minutes of the annual general meeting, held in January last, having been read, the Hon. Secretary, Mr. W. Holmes, reported in reference to the provincial Show of the Society to take place at Sheffield on November 16th and 17th, that the Midland Railway Company had offered to convey exhibits to the Show and back for a single fare, provided they were allowed to remain there all the time the Show was open; also that they were prepared to place at the disposal of those going from London to the Show two saloon carriages, if there were a sufficient number of travellers to justify them in doing so. The Hon. Secretary also reported that he had paid the sum of £70 in prizes awarded at the September Shows, and four silver medals had been sent to their respective winners. He stated that complaints had reached him from some of the smaller trade growers, that as all the trade classes were open to the large growers, they had but little chance in the competitions. He suggested that in the future the General Committee should name the sum they would be willing to give for Dahlias, and then request representatives of the Dahlia growers to meet and prepare a schedule of prizes, also that they should nominate judges in the Dahlia classes. A hearty vote of thanks was passed to those members who acted as stewards on the occasion of the Show. Mr. C. Harman Payne reported that the labours of those appointed to revise the catalogue of the Society were at an end; that their work had lasted seven months; that the revisers had received valuable assistance from the thirty members of the Catalogue Committee, also from outsiders, and they had made use of those suggestions likely to be of service to the Society. They had followed the programme laid down for their guidance as nearly as possible, and he thought the Society could be congratulated upon the possession of a catalogue of a very valuable character. The Hon. Secretary then moved the following resolutions, which were seconded by Mr. George Stevens, and carried by acclamation:—"That the members of the National Chrysanthemum Society desire to place on record their high appreciation of the very valuable work accomplished by those gentlemen who have prepared and published the 1888 edition of the Society's catalogue. To each of those who constituted the specially selected Committee, and who prepared reports on the several sections consigned to their care, the members tender their very sincere thanks, and especially to the Revision Committee, who received these reports, revised and tabulated the same." Further, "That the silver medal of the Society be duly and suitably engraved, and presented to Messrs. Lewis Castle, George Gordon, and C. Harman Payne, in recognition of the admirable result of their painstaking and arduous work; also, That a copy of this resolution be entered upon the minutes, and a lithographed copy be prepared and furnished to each member of both Committees." It was further proposed by the Hon. Secretary, seconded by Mr. R. Ballantine, and carried unanimously, "That the Society appoint a Permanent Revision Committee, to take such notes as may be necessary with a view to further revision at a future period, and that such Committee consist of Messrs. C. Harman Payne, L. Castle, and G. Gordon." Two new Fellows and sixty-one ordinary members were elected, bringing the total of the latter up to 572. A cordial vote of thanks to the Chairman brought the proceedings to a close.

LADIES' CHALLENGE CUP AT WINCHESTER.

I ENCLOSE an advertisement for the next issue of the Journal, in which you will observe the ladies of Winchester, through the Mayoress, have subscribed for and presented the Society with a very handsome silver challenge cup, value £15, on the express condition that it is offered for competition annually at our autumn show for Chrysanthemums as long as our Society remains in existence; and if at any time the Society should cease to exist it should pass to the Corporation of Winchester, to be disposed of as they should think fit. I should be much obliged by the insertion of this paragraph in the Journal, as the time is drawing somewhat near. Trusting that we shall have a good show season.—CHALONER SHENTON, *Hon. Secretary Winchester Horticultural Society.*

CHRYSANTHEMUM MRS. BURRELL—EARLY FLOWERING.

PERMIT me to recommend your correspondent who inquires about the best early flowering Chrysanthemums to add this to his list. It is a deep primrose yellow, and, if I remember aright, a "sport" from the very useful Mdme. Desgranges, but I do not know its origin—perhaps you would say. At all events, for most decorative purposes during September and October it can be relied on just as much as its foster-parent aforesaid—if the term can be applied. I saw some fine bunches, evidently of this, in the Waverley Flower Market in Edinburgh, about a month since, while my plants are only flowering now, being grown in the open air until commencing to bloom. I think Mr. Cannell of Swanley, who has given flower lovers so many good things, deserves the credit of having introduced this, but I am speaking from recollection. Here, where there are so many exhibition growers, I am proud to say the frost of the first week in October did little harm.—W. J. MURPHY, *Clonmel.*

CHRYSANTHEMUMS AT PUTNEY.

ALTHOUGH Mr. Stevens grows as many as 10,000 plants for flowering in the St. John's Nursery, Putney, it is surprising how well they look and how few plants there are which do not seem capable of producing good blooms. Besides growing a large general collection for flowering and supplying cuttings later on, large numbers of particular sorts are here cultivated; for instance, Elaine is represented by two long rows of about 1000 plants, very healthy and almost as even as a clipped hedge, so uniformly have they grown. The cuttings are rooted early in November; the points are pinched when the plants are 6 inches high, and again at 10 inches high, the result is nine to twelve branches, producing that number of fine blooms which meet with a ready sale. A high opinion has been formed of M. W. Holmes, an early flowering Japanese variety, chestnut red, inclining to dark crimson, the florets, which are tipped with gold, rendering it very attractive. The growth of this variety is striking, being robust with good foliage, the height being medium. As many as 800 of this variety are cultivated. Then, again, Princess Blanche, which is regarded as one of the best late-

flowering varieties, is represented by about 300 plants, all most promising. Of Lord Eversley, the pure white sport of Princess of Teck, which proved itself such a capital late-flowered variety last season, 400 plants are grown which did not measure more than from 9 to 12 inches high at the time of my visit, these being cut down in the middle of June. These will produce capital dwarf plants late in the season, no doubt. Fine plants of Mdlle. Lacroix are commencing to unfold their flowers; particularly dwarf and stocky were they, from 2 feet to 3 feet high, carrying three and four blooms each. The general collection is represented by whole rows of some varieties which are most popular, the whole being systematically arranged in parallel lines, the tallest plants in the centre. The foliage in nearly all cases was particularly healthy and of good texture, the wood stout, short-jointed and hard if not particularly large, just the kind to produce satisfactory results. Noticeable for their good appearance were the Queens, Tecks, Audiguiers, Molyneux's.—VISITOR.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

THE adjourned Conference of fruit growers at the Crystal Palace was resumed on Thursday the 11th inst., at 2 P.M., Mr. T. Francis Rivers in the chair, and there was a good attendance of those interested in the movement. The principal business of the meeting was to receive the report of the Executive Committee respecting the formation of an Association. It may be remembered that on September 8th last, at the conclusion of the Conference of fruit growers in the Crystal Palace, Mr. J. Cheal proposed a resolution to the following effect—namely, "That it is desirable an Association of fruit growers should be formed for the promotion of profitable fruit cultivation, and to improve the methods of distribution. The Executive Committee of the Conference being requested to prepare a report on the subject, to be submitted to the next meeting at the Crystal Palace, on October 11th this year." This was seconded by Mr. Fowler and duly carried. In pursuance of this resolution the Executive Committee met at 5 P.M. on Thursday, September 27th, at Anderton's Hotel, Fleet Street, Mr. T. Francis Rivers in the chair, twelve members being present. The Chairman referred to the favourable notices accorded by the daily and horticultural press to the Conference at the Crystal Palace, and it was mentioned that over sixty reports and articles referring to it had been published. A draft of the Association was then read, considered at some length, and finally adopted.

In submitting the draft named to the meeting on Thursday, the Chairman remarked that the inception of this Association was wholly due to Messrs. Gordon and Castle, who a few months since began the organisation of a Society which, he thought, had succeeded in drawing the attention of the people of England to the important fact that a large and lucrative industry was being silently withdrawn from our country, to the great advantage of those who had skilfully taken advantage of our apathy and indifference. The promoters had happily chosen the right time for inviting public attention to the deplorable results which might overtake them. The United States, Canada, Australia, and New Zealand were all on the alert to supply our markets with a commodity which they were supposed to be unable to furnish. Were they to sit by with folded hands and allow this to be done? Were they to complain that their inability was owing to landlords, land laws, railway rates, or middlemen? In his opinion they had nothing to do with it. The profits derived from judicious fruit cultivation were sufficient to cover the moderate and fair rents now asked for land. The real and fundamental cause was ignorance, not arising from want of intelligence or energy, but from the fact that no organised society, school, or college had ever undertaken seriously to teach the methods by which fruit cultivation might become successful. The Royal Agricultural Society had spent vast sums in advancing the interests of agriculture, with the result that it now took the leading rank. He hoped some day that the country would have a Royal Pomological Society. The State spent a large sum on botanical gardens with the most useful result, but it did not at present give any encouragement to an industry which was of serious importance to the land. One of the aims of their Society would be to draw attention to this omission, to rectify their past errors, and to place pomology in the rank which it should take as a science of high economic value. The other aims and objects of the Society would be to invite discussion, to hear papers, and to organise meetings in different parts of the country, in order that a special knowledge of pomology might be diffused as widely as possible, and intending planters furnished with information which would lead to success instead of failure.

Mr. G. Bunyard proposed the adoption of the draft constitution which had been printed and circulated amongst those present. The objects of the British Fruit Growers' Association would be to promote the profitable culture and improvement of fruits in the United Kingdom and to facilitate the distribution to consumers, and he believed that if conducted on the lines laid down in the report of the Committee the Association would be able to render immense service to those engaged in fruit culture. He referred to the statements recently made in a daily paper by an anonymous correspondent respecting the large proportion of worthless trees in nurseries, and on behalf of himself and that of numerous others in the trade he stigmatised the statement as absolutely false. Mr. J. Cheal seconded the proposition, and said there was plenty of room for the Association to do good and useful work.

Mr. Roupell of Roupell Park, Brixton, observed that, in view of the erroneous statement which had appeared in the Press, he desired to say that as an enthusiastic amateur he had given orders to most of the principal firms of the country, and he was glad to be able to say that they had always furnished him with good trees, true to name.

Mr. R. Dean called the attention of the Chairman to the fact that publications of the National Fruit Growers' League were being distributed at the Conference, reminding him that it was the Secretary of that body who wrote the wicked and scurrilous letter to the *Daily News* to which Mr. Bunyard had referred. (Shame.)

The adoption of the report was then put by the Chairman and carried unanimously. A list of proposed officers was then read, including Mr. Lewis Castle, Hotham House, Merton, and Mr. Wm. Earley, Ilford, as Hon. Secretaries; and it was announced that the names of over sixty persons desirous of becoming members had been received.

The following paper was by request then read by Mr. J. Wright :—

PROFITABLE FRUIT FARMING — MAINLY GOOSEBERRIES.

A POINT that I have observed at these meetings is a tendency to concentrate attention mainly on fruit-bearing "trees," such as Apples, Plums, and Pears. The importance of those crops, especially, perhaps, the two former, is admitted; and without suggesting that too much attention has been devoted to them, the fact remains that little or nothing has been advanced on the smaller but not less useful, and under certain conditions not less profitable, bush fruits—Currants and Gooseberries. It is to a successful example of growing the latter that I will chiefly direct attention now.

Having been credibly informed that Gooseberries were grown in the fens of Lincolnshire on an extensive scale and with great success pecuniarily—that the bushes were so large that twenty or thirty women could work amongst them without being seen, and that fruit was sent away in tons by rail to London as well as to cities and towns in the north, I thought I would endeavour to see for myself this fruit plantation on a level with the sea, and very few miles from it—a district exposed to the full sweep of the east winds in spring that are often so disastrous to fruit blossom in more or less sheltered inland localities.

A somewhat lengthened experience with fruits, first as a cultivator or worker amongst them for a quarter of a century, and subsequently as an inspector of the work of others in different counties, I never hesitate to journey a hundred or more miles for the purpose of verifying a statement, even though I may be convinced of its truth at the outset.

I am a strong believer in accomplished facts, and have a weakness for seeing them. Now and then some of the actualities of culture impress me, and a desire arises to impress the examples on others (who may not have opportunities for a personal examination) in the hope that the recital may possibly be of slight service to persons who have land at disposal and desire to cultivate it profitably.

The combinations in culture that have impressed me during the past few weeks are Gooseberries, with Apples, Pears, and Plums in Lincolnshire, and Apples and Osiers in Nottinghamshire. Some Apples in the Show to-day of Bramley's Seedling remind me of large orchards of it with their undergrowth of Osiers. When you see say twenty acres of Osiers 6 or 7 feet high, and standard Apples growing amongst them, their heads, as it were, resting on the Osiers and stems invisible, and both Apples and Osiers growing in the most satisfactory manner as if they took different food out of the soil, as perhaps they do; when you see that, I say, as it may be seen near Southwell, I think you will not forget it, and when you learn that the land so occupied has increased in value from £25 to £100 an acre in half a dozen years, some of you would perhaps not object to have a share in the little enterprise. This, however, is a digression, and as more will certainly be heard about this Apple and Osier culture, and as information can be obtained any day from Mr. Henry Merryweather, we will pass on to the Gooseberries.

Those to be referred to are at Pinchbeck, a large parish of 11,000 acres as level as the sea, the soil of medium texture, yet free working, alluvial, probably rich in phosphates, as old sea beds usually are, and resting on—well, apparently on water, for, judging by the dividing ditches, the water table appears to be within 3 feet from the surface. Authorities tell us Gooseberries like a dry subsoil. Perhaps they do, for they are very good natured, and are certainly quite content to thrive on a wet one in the Fens. The plantation in question is the property of Mr. Charles Parker, a farmer of 200 or 300 acres. I do not know whether he owns the whole of it or not, but hope he does. Be that as it may, the portion under fruit culture, with the well appointed homestead he has built, is his freehold, the reward of his industry, good management, and enterprise. He is one of those men of whom we ought to be proud in these days, for he makes land pay that is not under fruit culture, though this would be extended if he could make sure of a sufficiency of labour for gathering the crops. What a contrast is here

to what obtains in many districts, where men and women are longing for labour and longing in vain. Mr. Parker employs five times more workpeople on his little farm than hundreds of farmers do who have five times more land than he has, and they grumble at "bad times," while he smokes his pipe in contentment at work well done and in rest well deserved.

I have said he makes land pay that is not under fruit. An instance will suffice—a fine piece of Mangolds, pointed out as showing the superiority of a mixture of sulphate of ammonia and superphosphate over bonemeal, the same in value being applied on different portions of the field. "But," remarked the owner, "the Mangolds are only a second crop." "A second crop!" I repeated, parrot-like and in surprise. "Yes," was the quiet rejoinder, "I made £200 out of the plot this year before the Mangolds were sown." That was a poser to me, for the land would not exceed 4 acres. But what was the wonderful crop? It is a very simple one that you are all familiar with, so I think I will leave you to work it out. Why not? Mr. Parker did, and no one told him; and besides, I think I ought to have his permission before making it known to the world. I have no such reservation about the Gooseberries, they are Crown Bobs, and such bushes of the good old variety as I have never seen elsewhere. Instead of twenty or thirty women working amongst them without being seen gathering the fruit, a hundred might have been so engaged, yet invisible. Several of the bushes were as high as I am, some higher, and all much farther round, while when laden with fruit a few of them may have been nearly as heavy, but perhaps not quite. The yield varies from 30 to 40 tons, and this year the price obtained for them was £10 a ton. It is considerably lower than that when the crops are heavy everywhere. The culture is very profitable, more so, perhaps, and more quickly than any under crop that can be grown in orchards, and more so, also, taking one year with another, than the fruit tree crops above them of Apples, Pears, and Plums, though when all are good alike, as occurs occasionally, they realise a little fortune; but the top crops fail at least every alternate year, and sometimes more frequently, the bottom crop seldom. This is the staple.

The Gooseberries are gathered as soon as they are large enough for use, and are cleared off as quickly as possible, and are sent off in cwt. hampers by the Great Eastern Railway southwards, and the joint Great Northern in the other direction, Pinchbeck station being within a mile from the grounds. Several varieties of Gooseberries have been tried, including the celebrated Whinham's Industry, that is so good in many places, also Whitesmith, this and Lancashire Lad being favourites with many market growers, but Old Bob holds the field in the Fens, and drives all competitors out of it sooner or later. It has also driven out Currants both Red and Black, in bringing more grist to the mill than they did, and that, and that alone, is the test of merit. There is no charm in names and outside reputations with growers like Mr. Parker. That which pays best is retained and increased, the relatively inferior, or less lucrative, being removed, no matter whence they come and what they are called. The bushes are grown on clean single stems raised from disbudded cuttings on the premises. Several used to be sold, but only about 10,000 a year are now disposed of to friends and neighbours. Cuttings inserted with all their buds resulting in a mass of suckers, as is not uncommon in some parts of Kent, would not be tolerated. They are regarded by Mr. Parker not only as slovenly, which they are, but relatively inferior in productiveness to those grown on clean stems, and with no other growths springing from the soil.

Pruning is mainly confined to thinning out any shoots or branches that, if left, would impede the work of clearing the crops. There is no systematic spurring, or of shortening the terminal growths at a prescribed number of inches. but possibly the ends of any that project far beyond the rest are snipped off, for the bushes are not entirely wanting in symmetry. They are creditable in appearance regarding them from a gardener's standard, but are essentially fruit and money producers, and in this most important respect answer their purpose well.

A few words may be added on "top" fruit, in order to complete the description of this simple yet profitable fruit garden. It has been said that Apples, Pears, and Plums are grown. These were planted amongst Gooseberries, or the Gooseberries planted amongst them, I cannot tell which; nor does it matter, because in present routine the removal of both is constantly going on. When trees show signs of failure they are either grafted or uprooted, and old bushes give place to new when the desirability arises.

The larger trees are planted as a rule about 6 yards apart, which suffices for Plums and early Codlin Apples, but not for later Apples of spreading growth. Generally three rows of Gooseberries are grown between each two rows of trees, a few bushes at about 6 feet apart also being planted in lines with the trees.

No Pears are grown in bulk besides the Hessle, which is one of the hardiest, tallest, and freest growers and abundant bearers, and is well adapted for exposed and cold districts. It is not unusual to gather a hundred pecks from a tree, and there is no difficulty in disposing of all that can be grown. The fruit is neither large nor particularly handsome, but is good, and the crops "pay" well.

Of Plums reliance is placed on Victoria, because the trees always bear, and the fruit always sells. It is the Plum of Plums for northern orchards, and the branches do not break when lopped in occasionally, the trees then making closer heads than is natural to the variety. Treated in that simple way props, that are so numerous in some orchards, are dispensed with.

Apples are by far the most extensively grown as "top" fruit, but though trees are numerous varieties are limited. Keswick Codlins have been long grown, but this and all others of the type are being superseded by the Domino, which grows and bears well in a young state, giving quick returns, the fruit being ready as soon as the Keswicks, while it is larger, darker in colour, heavier, and keeps longer. This Apple is spreading and will spread. A variety not often seen in the south, the Sleeping Beauty, is grown because of its productiveness, for the fruit is not large, and the variety not likely to be greatly increased. Jenning's Seedling, a local Apple, is bearing more heavily than any other, and the fruit being of good size is in demand in the markets. Portions of clean branches of three or four years' growth, cut into lengths of 3 feet or so and firmly inserted in the ground, make fine trees of upright growth. Some of them 20 or 30 feet high were crowded with excellent fruit. Possibly specimens may be sent to Chiswick next week. Dumelow's Seedling has been extensively planted, and for a long time was relied on for late use and was very profitable, but of late years trees of it, old and young, have entirely failed to give satisfaction. They have assumed a sickly appearance from some unknown cause, and this once favourite Apple is "done for" in the district. Its place is being taken by the Nottinghamshire Apple, Bramley's Seedling. Trees planted twelve or fifteen years are models, strong yet sturdy in growth, with dark green leaves and clusters of large glossy green, red flushed fruits of great weight, and which command the top price in the market. This is essentially an orchard Apple that is bound to spread. The trees appear to be intermediate in character between Dumelow's Seedling (also known as Normanton Wonder and Wellington) and Blenheim Pippin, and I should not be surprised if those are the parents. It seems to combine the vigour of the latter with the free spurring character of the former. I have seen 50,000 trees of Bramley's Seedling during the past month, and one bearing a crop for which the owner would not take £5 and be relieved of the gathering. A writer in an evening paper, the *Echo*, alludes to a tree bearing £10 worth of fruit. I have not seen such a mountain of gold, but I have seen upwards of 50 pecks of 18 lbs. on a tree that can be sold any day for 2s. a peck. It is well to see what is going on in the east and north, and to take note of varieties. One I have been told will even outlive Bramley's Seedling, and this is Pearson's (of Chilwell) New Northern Greening. I have seen two-year-old trees of this bearing freely fruits which for symmetry and solidity could not be surpassed. It is a long keeper, worthy of attention, and has undoubtedly a long career of usefulness before it; but as to its surviving its compeer, I feel sure that no person living will witness the end of either, so the question of "durability" must be left to be settled by succeeding generations.

The fashion at present is to plant Apple trees closely together on Paradise stocks for early bearing. Undoubtedly that is the way to get the most Apples in the least time, but I have yet to be convinced, taking into account first cost and after labour (with the contingences of seasons) that a combination of orchard Apples and Plums, with an undergrowth of Gooseberries, will not give an equally good return to a large number of cultivators, not skilled in pinching and pruning, but who yet may send the best of fruit, "top," "bottom," or both, in large bulk to the markets after the manner of the intelligent and thrifty Fen farmer at Pinchbeck.

The proceedings were closed by votes of thanks to the Chairman, the readers of the papers, and the exhibitors of some objects of interest.

CRYSTAL PALACE HARDY FRUIT SHOW.

OCTOBER 11TH TO 13TH.

A VERY satisfactory Exhibition of hardy fruits was held in the Crystal Palace, Sydenham, on Thursday, Friday, and Saturday last.

week, the competitors being more numerous and the quality of the exhibits higher than the majority of experienced visitors expected to see. Apples were especially good, and comprised a good proportion of large or brightly coloured samples. Pears were rather below the average in size except in a few of the leading collections, Mr. C. J. Goldsmith in particular showing remarkably well. Several fine collections of miscellaneous fruits were staged in the Veitch Memorial class, while vegetables were most extensively and well represented. The exhibits were most conveniently and effectively arranged under the direction of Mr. W. G. Head upon a series of tables in quadrangles, thus allowing ample space for the visitors instead of confining them to one or two avenues.

We cannot give full details of all the classes as the demands upon our space are heavy this week, and readers will find ample lists of varieties in the subsequent reports. Amongst the open classes that for a collection of Apples was most interesting, a capital display being provided by the four prizewinners—Mr. J. Cranston, Hereford; Mr. J. Watkins, Hereford; Messrs. G. Bunyard & Co., Maidstone; and Mr. C. G. Sclater, Exeter, who were placed in the order named. A similar class was provided for Pears, and in that the honours were won by Mr. J. Butler, gardener to A. J. Thomas, Esq., Orchard Lane Gardens, Sittingbourne; Messrs. J. Cheal & Sons, Crawley; Messrs. G. Bunyard and Co.; and Mr. W. H. Chisholm, Oxon Hoath Park, Tunbridge.

The amateur classes were well filled, and the exhibits of considerable merit. With twenty-four dishes of Apples, Mr. J. McKenzie, gardener to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, was first, followed by Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, and Mr. S. Ford, Leonard's Lee, Horsham. For twelve dishes of Pears and the same number of Apples Mr. C. J. Goldsmith, gardener to Mrs. C. A. Hoare, Kelsey Manor, Beckenham, was first in both classes, showing admirably grown fruits, such as we are accustomed to seeing from this experienced cultivator. Messrs. Chisholm, Jones, Killick and Jewson followed in the two classes.

The Veitch Memorial prize of £5 and a bronze medal, with three other prizes offered by the Crystal Palace Company, brought five competitors, Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, winning premier honours with the following Grapes: Gros Colman, good bunches, and berries finely coloured; Muscat of Alexandria, well ripened, and Gros Maroc, even bunches and good colour; a Queen Pine Apple, Braby's Gages, Raby Castle Currants, Filberts, Cox's Pomona, Astrachan, and Worcester Pearmain Apples, Morello Cherries, Read's Scarlet Flesh Melon, Princess of Wales Peaches, very fine; Pitmaston Duchess, Brockworth Park, Souvenir du Congrès, and Williams' Bon Chrêtien Pears, Horticultural Prize Melon, Coe's Golden Drop Plum, Warrington Gooseberries, and Brown Turkey Figs. Mr. Pratt, Longleat Gardens, Warminster, was second, showing twenty-one dishes of fruit, a creditable collection. Mr. A. Evans, gardener to S. Hodgson, Esq., Lythe Hill, Haslemere, was third, and Mr. J. W. Reed, gardener to E. Pettitt, Esq., Broadwater, Oatlands Park, Weybridge, was fourth.

The special prizes offered by Messrs. Sutton & Sons, Reading, and Mr. T. Laxton, Bedford, together with the prizes provided by the Company and the Turner Memorial prizes, brought an excellent display of vegetables. Gourds and Pumpkins were largely shown, and extra prizes were awarded to Messrs. G. Bunyard & Co., Maidstone, for a handsome collection of market Apples; to Messrs. Sutton & Sons, Reading, for a beautiful collection of seedling Potatoes; to Messrs. J. Laing & Sons, Forest Hill, for a varied collection of Apples and Begonias; to Messrs. H. Cannell & Sons, Swanley, for an excellent collection of Begonias; and to Mr. W. Taylor, Hampton, Middlesex, for a collection of Apples and fruit trees.

Notes & Gleanings

Events of the Week.—To-day (Thursday) the National Apple and Pear Conference in the Royal Horticultural Society's Gardens at Chiswick will be resumed at 1.30 P.M. The papers announced for this day are "Canker in Fruit Trees," by Mr. J. Douglas and Mr. E. Tonks; the "Enemies of the Apple and Pear," by Mr. J. Fraser; "Varieties of Apples for Sussex and their Culture in Heavy Clay Soils," by Mr. J. Cheal; "Renovation of Old and Formation of New Orchards in the Midlands," by Mr. W. Coleman; and "Apples and Pears Suitable for Cultivation in Scotland," by Mr. M. Dunn, Mr. Shirley Hibberd presiding. On Friday the papers to be read are on "Compensation for Orchard Planting," by Mr. W. E. Bear; "Fruit Production and Distribution," by Mr. E. J. Baillie; "Railway Charges for Carriage," by Mr. D. Tallerman, Mr. H. J. Veitch being appointed to preside on the occasion. On Tuesday, October 23rd, the Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster, and the Floral Committee of the National Chrysanthemum Society will meet in the Westminster Aquarium on Wednesday, October 24th.

—— To Correspondents.—In consequence of the pressure on our columns several communications on various subjects cannot be inserted this week, but they will be published as soon as possible.

—— National Auricula Society, National Carnation and Picotee Society.—The Honorary Secretary informs us that the annual general meeting of the above societies will be held in the room of the Horticultural Club, "Hotel Windsor," Victoria Street, on Tuesday, October 23rd, 1888, at 4 P.M. precisely. The business of the meeting will be the election of officers and committee; receiving the Secretary's and Treasurer's report; the election of Judges for the ensuing year, and any other necessary business as may pertain to the annual general meeting.

—— Horticultural Club.—The first dinner and conversazione for the season 1888–89, took place last Tuesday at the new rooms of the Club, "Hotel Windsor," Victoria Street, Westminster. There was a very large attendance of members, including Mr. John Lee (Chairman), Rev. W. Wilks, Rev. F. H. Gall, Messrs. H. J. Veitch, J. H. Veitch, J. Walker, H. J. Pearson, Chas. Pearson, A. H. Pearson, Bunyard, Rivers, Druery, Girdlestone, Golding, Morris, the Secretary, &c. The subject for discussion was "The Peach," and was opened by Mr. T. Francis Rivers. A discussion afterwards took place, in which Messrs. Lee, Bunyard, H. J. Veitch, Pearson, Golding and others took part. A vote of thanks was offered to Mr. Rivers, and the Secretary announced that in November Mr. Bunyard will read a paper on "November and December Pears," and in December Mr. Pearson one on "Chrysanthemums." Unqualified approbation was bestowed on the arrangements of the Club, and a very agreeable evening was spent.

—— The Nottinghamshire Horticultural and Botanical Society.—The monthly meeting of the above Society will be held at the Arboretum Rooms, Nottingham, on Wednesday, October 31st, at 7.30 P.M., when Mr. M. Gleeson, Clumber Park Gardens, Notts, will read a paper on "The Pine Apple," giving a short sketch of the distribution of the plant, its introduction to Europe, and the various methods of its cultivation down to the present time.

—— Lapageria alba.—This fine greenhouse climber is in good condition at Cleveland House, Clapham Park, the residence of S. Ralli, Esq. One plant is most densely flowered, a single bunch containing twenty-three beautiful waxy blooms; it is an object of great beauty Twelve years ago, when carpet bedding was at the zenith of its popularity, the beds at Cleveland House were amongst the most famous in the country, and although the old order has changed there are many features of interest in the gardens, which are now under the able management of Mr. H. Jackson, on whom their condition reflects the utmost credit.

—— Helenium autumnale.—I find this a capital yellow flowering companion for the Pyrethrum uliginosum. It is of the same vigorous growth, strong clumps forming in the course of two seasons, and flowers slightly earlier. The flowering stems attain a height of about 4 feet, the flowers being produced on a branching head. Fewer flowers are formed, and these have shorter stems than is the case with the Pyrethrum, but they are somewhat stouter, and certainly very beautiful in a cut state. It is perfectly hardy, and will grow wherever planted without any further trouble being taken with it, but at the same time pays for a little attention in the shape of lifting, dividing, and replanting the clumps occasionally.—W. I.

—— Violet Wellsiana,—I enclose you a few flowers and leaves of this beautiful single Violet, which bids fair to eclipse all the other single varieties, and is decidedly the most distinct among them, and its strong vigorous growth, large flowers and foliage, at once arrest everyone's attention. We have been gathering flowers of it since August from unprotected plants, and although we have had 11½° of frost the plants are nothing the worse. It is a fitting companion to the beautiful double variety Marie Louise, and I advise all who have not grown it to do so.—Joseph Oliver, *Eslington Park*. [The flowers received were 1¼ inch in diameter, of good form and great substance, borne on stout stalks 7 inches in length. The leaves are 5 inches in diameter and characterised by great robustness of growth. This fine Violet was, we think, placed in commerce by Mr. Charles Turner of Slough.]

—— Pyrethrum uliginosum.—This is always appreciated, but never in my recollection has it been of greater service than at the present time. A showery season just suits it, and the numerous growths in each strong clump are much taller than usual. All are branching and flowering grandly, and are quite uninjured by frosts, whereas nearly all other plants in the mixed borders are completely spoilt. Harvest Thanksgivings generally have been rather late, and what the decorators would have done without a bountiful supply of these "Marguerites" it

is difficult to decide. For vases, again, they are most useful, the beautiful white flowers, borne on long wiry stems, exactly meeting the requirements of all who delight in light and tasteful arrangements. Plants ought to be found in the shrubberries and in the back rows of the herbaceous or mixed borders everywhere.—W. I.

—— I HAVE noticed your various correspondents' remarks on the resting of EUCHARIS GRANDIFLORA as a means of flowering it successfully. Many cultivators, no doubt, have tried the resting. Some have tried it to their cost, others to their profit. Still resting, to be of the right benefit, requires to be proceeded with cautiously. I could quote plenty of instances where taking the plants into cool houses had not the desired effect, when they flowered equally well with never having been taken out of the stove, only being kept dry there. During June and July I would not hesitate much to put Eucharises outside to rest in a sheltered and suitable place, but at any other time, cool houses, I think, would be risky, weakening the plants and bringing on diseases. There is apparently no accounting for how they do so well at times and at other times so poorly. I have just been pleased to count seventeen spikes of flowers coming up on a plant now; and the same had over fifty spikes of flowers on it when we exhibited it last August, since which time it has not been out of the stove.—R. M.



ROYAL PATRONAGE OF THE ROSE.

WE understand that H.R.H. the Princess of Wales has kindly consented to become the Patroness of the National Rose Society.

THE MANETTI STOCK.

MR. B. R. CANT'S communication on page 342 is very interesting, and in the face of what he says I suppose I must admit that Roses will do on the Manetti, at any rate in some favoured neighbourhoods. Messrs. Baker and Jowitt I think both reside in very genial climates, as does Mr. Cant himself. In such situations the Manetti may answer, but how many of us can reside in places with a climate like Hereford or Colchester? I think the secret of Messrs. Jowitt and Baker's success, extending over several years, was owing more to the fact of their going in for big batallions more than anything else, and I have a shrewd suspicion that had they grown their Roses on the Briar, own root, or any other stock the result would have been the same. Mr. Cant says (page 343): "For choice I prefer the Briar cutting to any other stock," so I suppose I may fairly conclude that if he were a small amateur about to plant a few dozens of Rose trees he would not go in for the Manetti even at Colchester. If Mr. Cant has four acres of cutbacks, I think he is the exception that proves the rule, and his statement surprises me very much. Mr. Cant objects to my printing his opinion of the Briar without putting in his remarks about the Manetti. I gave the authority chapter and verse, and his statement, "the Briar cutting is my especial favourite" was so straight, that I did not feel called upon to insert anything further. It was open to any reader to procure the "Rosarians' Year Book" and read the whole article. It is quite sufficient for me to know that Mr. Cant's favourite stock is the Briar; so it is mine, and so it is that of a good many others, and their number is growing larger every day. I should very much like somebody to come to Sheffield and plant a six-acre field with Roses on the Manetti, the result would be such a triumph for the Briar men. In conclusion, all I can say is that my opinion of the Manetti has been gained from hard-bought experience only, and my fertile imagination has not been in any way exercised for facts. For the first few years of my Rose-growing life I used Manetti only, and the result was so disheartening, and the loss so great, that I was very nearly at one time giving the whole thing up in despair. Then I tried the Briar. The losses ceased, and now I would be sorry indeed to have to do without my Roses—but no more Manetti, please.—D. GILMOUR, JUN.

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE anniversary dinner of the above named Society was held in the Cannon Street Hotel on Thursday evening, October 11th, Dr. Robert Hogg presiding, and H. J. Veitch, Esq., in the vice-chair. There was a large attendance of members and visitors, over one hundred being present, the Chairman being supported by Mr. John Laing, Mr. G. Paul, Mr. N. Sherwood, Mr. H. Herbst, Mr. G. Deal, Mr. Nutting, Mr. W. Collins (Secretary), and others. The chair was taken at 5.30 P.M., and after an excellent dinner had been disposed of, a long and interesting programme of toasts and songs was proceeded with, the latter portion of the entertainment being admirably rendered by Miss Mary Belval and friends.

The customary loyal toasts were duly honoured, and Dr. Hogg then proposed the toast of the evening, "Continued Success to the United Horticultural Benefit and Provident Society." He said that twenty-two years ago a society existed called the United Horticultural Society, which was composed of men of action and energy. They conceived the idea of holding an exhibition in the City of London, and the first was accordingly held in the Finsbury Square, another was held somewhere else, but the climax was that held in the Guildhall, which proved a great success. A number of gentlemen guaranteed £100 as the prize fund, and the results were so satisfactory that a considerable sum was left to the credit of the promoters. Although that society has disappeared it left behind it a bantling, and the profits of the above named shows formed the nucleus of the present fund. The Society is now flourishing, but not so well known as it should be, and he was glad to see the Committee had decided to come out into broad daylight. For many years they carried on their work with great caution, at one time nearly giving up in despair, but the tide turned, and they are now going on in a most satisfactory way.

The details of the several rules were very intricate, but he had endeavoured to master them, and would give a few particulars of the way the Society is worked. The objects of this Society are to render assistance to gardeners in time of sickness, calamity, and old age. It is not a charity, it is not even a benevolent society subsisting on the benevolence of others, but it is essentially a thrift and self-help society. It is in fact a benefit society and savings' bank combined, the payments not being more than those of the ordinary benefit societies whose members have no claim or surplus funds. There is, I believe, no other society which offers the same advantages. The overplus in this society is equitably divided amongst the members yearly, and invested for them in stock; each member has a separate account, and the accumulated fund, with all interest accruing, is payable on the death of a member to his nominee, or can be drawn by himself at the age of seventy years. Sums amounting to between £50 and upwards are now credited to some members, and the yearly interest on the same closely approaches the annual payments to the Society. This is a point of the greatest importance, for it means that in the course of time nearly, or quite, all the sums paid as contributions will be added to the members' deposit account, the interest meeting all liabilities that entitle such members to all the benefits of the Society.

The organisation consists of three funds—the benefit or sick fund, the management fund, and the benevolent fund. The benefit or sick fund is to provide a weekly payment to members when they are incapacitated from work through illness. When a member is wholly unable by sickness to follow his employment he is entitled to full sick pay; but it is not necessary that he refrain from all work when able to do a little, to entitle him to a proportion of sick pay. The management fund is to meet what may be called current expenses, such as rent, stationery, printing, &c. I would like to call special attention to this fund. The Committee, of course, as in other societies, give their services gratuitously; but the Secretary, on whom the heavy work devolves, has hitherto only received a nominal sum, and the most he is entitled to receive is £20 annually, with 6d. per annum for every member over 300. The benevolent fund is established to enable the Committee to grant extra allowances beyond sick pay where additional assistance is needed, as, for instance, to meet heavy doctors' bills, accidents, and sudden unforeseen calamities.

The payment of 6d. a week, or 26s. a year, insures 10s. 6d. weekly in case of sickness; 9d. weekly, or 36s. a year, insuring 16s. weekly. Members contributing 26s. yearly to the sick fund pay 2s. annually to the benevolent fund; those paying 39s. yearly contributing 3s. annually to the above fund; and all pay 2s. 6d. annually to the management fund. These are the whole of the liabilities; and I may state, as showing the very light nature generally of the demands on members, that the payments to sick members during the present financial year have amounted to £30 11s. 8d., this being met by deducting only 2s. 6d. from those members who contribute 26s. a year, thus leaving £1 3s. 6d. of their subscription to be added to their deposit account. After attaining seventy years of age the member ceases to pay into the sick fund at all, and he is provided for from the benevolent fund. The Society has been established twenty-two years, and the sum of £4200 is invested in consols, and is the property of the members, each member's share being debited to him in a separate account. There could be no question respecting the advantages of such a Society, and he had great pleasure in proposing its continued success. (Cheers.)

In replying, Mr. N. Cole briefly traced the progress of the Society, and referred to the valuable assistance Mr. J. Wright had rendered in making it so widely known, which had led to a large increase in the number of members.

"Success to Kindred Societies" was proposed by Mr. H. J. Veitch, who remarked that he was not prepared to furnish the meeting with such important statistics as the Chairman had done, but he could say that he was sure the kindred societies might and ought to help one another. As as example he stated that within a few months of the death of Mr. McElroy, the late Secretary of the United Horticultural Benefit Society, the Committee of the Gardeners' Royal Benevolent Institution was able to place the widow on the funds as a pensioner. Respecting the Gardeners' Orphan Fund, Mr. G. Deal would be able to give them more particulars than he could do, and in the unavoidable absence of Mr. John Lee he called upon the veteran Secretary, Mr. Cutler, and Mr. G. Deal to respond for the two societies mentioned. Mr. Cutler regretted that he had been named to reply, and he would have preferred

seeing their venerable friend, Mr. J. Lee, present to perform that task. The Gardeners' Royal Benevolent Institution is endeavouring to accomplish much good, and they had been very successful. As an indication of the importance of having a good balance, he mentioned that many years ago he had an interview of the late Baron Rothschild, and obtained from him a donation of £50 for the funds of the institution The Baron asked what would be done with the money, and the reply was that they intended making it a nest egg, a course which was highly approved by the donor. In returning thanks for the Gardeners' Orphan Fund, Mr. G. Deal said that there were over 6000 kindred societies in London, with more than a million contributors, but they had much reason to be gratified with the progress of the fund in which he was specially interested, for though it had only been established a year, they had obtained between £1700 and £1800, and placed ten children on the fund. He congratulated the United Horticultural Benefit and Provident Society upon their satisfactory condition. It has been said that every benefit society is solvent that had an average of £6 per member in hand, but this Society has about £12 per member, and he attributed the result to some extent to the different funds for special purposes.

The "Honorary Members" was proposed by Mr. Hudson (the Treasurer), coupled with the named of Mr. J. Laing and Mr. W. Paul. He said they received material help from their hon. members, and they hoped to increase their numbers considerably. Mr. Laing had much pleasure in supporting the Society as well as the two other institutions specially for gardeners. Mr. Paul added his acknowledgments to those of Mr. Laing, and said that when he first saw one of the Society's circulars he was much struck with the unpretentious character and the indication of quiet determination to carry out their object. He hoped there is a future before the Society that would surpass the expectations of its most sanguine friends.

The "Health of the Chairman" was proposed by Mr. N. Sherwood, who said the thanks of the Society were due to Dr. Hogg for his assistance in presiding at the dinner, and for the encouraging remarks he had made. The Society is undoubtedly in a flourishing condition, but it deserves all support, and he was sure all would join in cordially wishing Dr. Hogg long life and health. This was performed most enthusiastically with musical honours. In responding, the Chairman observed that his sympathies were always with gardeners and gardening. For fifty-two years he had been closely associated with the horticulture of the metropolis, and though the winter frosts had come upon him and some of his fellow-workers, he hoped they would be spared to help for some time to come.

The next toast was, "The Trustees, Committee, and other Officers of the Society," and in proposing this Mr. J. Wright said—

The United Horticultural Benefit and Provident Society was started by gardeners for gardeners, and its directorate consists wholly of gardeners—the Trustees, Messrs. G. & J. Whecler and J. George; Treasurer, Mr. J. Hudson; and Secretary, Mr. W. Collins, all being well-to-do members of the craft, men of high character, shrewd, practical, business men, who have steered a safe course, which is all-important. The Committee might, and no doubt would, have gone ahead faster but for the stringency of the rules leaving them practically without an administrative fund. The fundamental difference between this and ordinary benefit societies was forcibly stated to him a few years since by Mr. George Baker, late gardener at Coombe Cottage, Kingston-on-Thames, and now of Membland Hall, Ivybridge, Devon, to whom the Society is much indebted for its success, and who was its Treasurer for many years. "I have paid," observed Mr. Baker, 7d. a week into the Old Fellows (or Foresters, I forget which), since I was eighteen years of age, and I am now fifty. I had, fortunately, had nothing out in that time, and if I go on paying all my life there will be £12 at my death." And then he continued—"I have paid 1d. a week less into our Gardeners' Society for seventeen years, and now have nearly £40 to my credit, and if I continue paying as long as I paid into the other I shall have £100. This is £100 if alive at seventy, against £12 at death, and 1d. a week paid more for the latter privilege than the former!

Mr. Wright said it was in the year 1883 that he made himself intimately acquainted with this institution. He called on the Secretary and asked to examine the books. They were promptly placed before him, and he was invited to examine every page, scrutinise every item, and point out any fault. He could find no fault, and had great pleasure in placing the advantages the Institution offered to gardeners before the world. He intended to support in every way he could this and other kindred institutions established for the benefit of gardeners, their widows, and children.

Mr. J. Wheeler (Trustee) and Mr. Chard (Committee) replied briefly, and Mr. W. Collins (Secretary) remarked that there was little left for him to say respecting the Society, but he had one or two pleasant announcements to make. In the first place, before the proceedings commenced Dr. Hogg had handed him a cheque for £10; secondly, Mr. N. Sherwood had signified his intention of becoming a life member. They have now 270 benefit members and thirty honorary members, the numbers steadily increasing. He mentioned several cases in which their funds had been employed with considerable advantage to the members or their nominees, and he added that at the present time they have no sick members on their list.

The Chairman said it afforded him peculiar pleasure to propose the health of Mr. H. J. Veitch, their Vice-Chairman, for he had known him all his life, and known only good of him. He had also known Mr. Veitch's father, grandfather, and other members of his family, so that he had watched his progress with considerable interest. He also referred in commendatory terms to the energy and ability with which Mr. H. J. Veitch, and his brother, Mr. John Veitch, entered on the management of the business at the death of their father. Mr. Veitch expressed his hearty thanks for the manner in which the Chairman had proposed his health, and he was glad to have an opportunity of publicly expressing his gratitude for the kindness and serviceable advice he had received from Dr. Hogg during many years of friendship. Mr. Veitch also proposed the next toast, the health of the visitors, coupled with the name of Mr. Baker, who responded briefly in suitable terms.

Mr. W. Paul proposed the "Horticultural Press," which was replied to by Mr. B. Wynne. Mr. Nutting moved that the best thanks of the meeting be given to Messrs. Williams, Laing, Cannell, Chard, and Thomson, who had contributed so liberally to the beautiful array of flowers and fruit provided, and the proposition was carried with acclamation. The Chairman then tendered the thanks of the meeting to Miss Mary Belval and her musical friends for their excellent contribution to the pleasure of the evening, and the proceedings terminated shortly before 10 P.M., all being thoroughly satisfied with this most agreeable gathering.

FRUIT-NAME HOLDER.

It is quite common to see the names of fruits laid on the plates at exhibitions, and they are apt to get misplaced in being taken up by visitors and put back on the wrong dishes. The holder figured we brought from the Chiswick Fruit Conference. It is made of a piece of wire, the size of a stout knitting needle, and about 30 inches long. One end is made into a circle nearly 5 inches in diameter and looped, the other bent over to the centre of the circle, then taken upright, and at the height of 6 inches given a twist and formed into a square or nearly so, the end finishing with a hook as shown. A label can be suspended from the hook, or a card with name placed behind it, where it is held firm by the spring of the wire. One side of the circular base placed under the plate brings the name above the fruit at the back of the dish, and the little contrivance answers its purpose well. It is an American or Canadian idea, and a number of the holders fell into the hands of Mr. Barron at the Colonial Exhibition. Any handy man can make them. Other forms of holders equally simple can be affixed to the plates.



FIG. 42.—FRUIT-NAME HOLDER.



KITCHEN GARDEN.

ASPARAGUS PLANTATIONS.—Asparagus plants have grown very well this season. They are much more luxuriant than last year, but the growths are much greener than they were in mid-October, 1887. The roots and crowns are less matured too, and probably they may not be in such good order for early forcing as we desire, but they will improve considerably in this respect. If the surface of the bed is covered with weeds remove them at once, as they will hinder the crowns from maturing. Should any kind of vegetable crops have been growing between the Asparagus, these should also be removed, but do not cut away any of the Asparagus stems until they have withered. The inexperienced are very apt to "trim" the growths as soon as they begin to appear brown, but this is a mistake that must be guarded against, and the seasonable work that applies to all Asparagus at the present time is clean the surface of the beds and leave the tops alone. As an indication of the unfavourable summer our Asparagus has failed to berry this year.

RHUBARB FOR EARLY FORCING.—As Apples are scarce in many parts substitutes will have to be found for them, and none is more readily secured than Rhubarb. Good roots are easily forced to secure a supply in December, and as most garden owners have always plenty of roots they ought to be taken advantage of. Roots that have been grown for some years in the same place are much better for forcing than those that have been divided or transplanted last year or the year before, and very large sorts are not so suitable for forcing as the smaller varieties. Probably the whole of the roots in a quarter would not be ready for forcing, but it may be necessary to select one here and there, and those with very prominent crowns should be chosen. Do not disturb them now, but as the leaves die remove them at once and expose the crowns as much as possible to the sun.

EARTHING SPRING CABBAGES.—The spring Cabbage have grown freely of late. Many of them are ready for earthing up now, and they are much benefited by this practice, as it protects their stems in winter and keeps them firm in the ground, two important points in the successful wintering of all open-air plants. Should there be any blanks fill them up before beginning to earth, and draw the soil well up to their necks.

STORING BEETROOT.—Beetroot is the least hardy of all vegetable roots, and it should be taken up and protected before frost injures it. If the roots are firm and deep in the soil loosen them with a fork, but do not break them, as this would allow the juice to escape. Very large roots must be rejected. Those of Dell's type are the best. The leaves should not be cut close into the crown, but about 3 inches from it, as if cut in the roots will bleed, and this takes away the virtues. They must be stored under cover, where wet and frost will not reach them, but they must also be kept cool to prevent their growing again. Moderately dry leaf soil, ashes, or sand are the materials in which they may be stored, and if they are placed in a heap so as to have all the crowns projecting outwards they will keep well.

LATE TOMATOES.—Late fruits may be secured from plants that have been growing all the summer under glass. We have lately cut all the ripe fruits from them, removed every dead leaf and superfluous shoot, and given them a little rich surface dressing. There are many late green fruit on them still, and this will cause these to swell and ripen until well into winter. Although the plants may be leafless near the bottom of the stems this will not prevent the top fruit from succeeding, and as Tomatoes at Christmas are very valuable the utmost attention should be given to old plants now. In many cases they will have been grown all the summer without fire heat, but this should now be applied to assist them.

KIDNEY BEAN SEED.—In some seasons we have gathered much of this, but our crop is very backward this year; indeed it was never more so, and we would not advise anyone to save and trust to half-ripened seed. The dwarf varieties have become quite ripe, but it is the runners that have failed, and unless the pods have become quite brown and the seed firm do not save it.

VEGETABLE MARROWS.—The frost has cut down the leaves, and many half-sized fruits have come to light. If these are left on the ground they will soon decay, but if cut and placed in a dry room they will remain sound and good for many weeks.

FRUIT FORCING.

VINES.—With so many good varieties of late Grapes that we now possess early forcing is not by any means essential for a supply of Grapes all the year round. The most valuable late-keeping Grape is Lady Downe's; it bears well, and the fruit keeps fresh and plump up to June. In quality it is unsurpassed, for when ripened in strong heat the Muscat flavour is more highly developed than in a low temperature. This is well, as all late-keeping Grapes owe much of those properties to thorough ripening under the influence of sun and strong heat; in fact, Grapes that are to hang for any length of time must not be ripened in cool vineries. Black Hamburghs, for instance, will not remain in good condition nearly so well if ripened in a cool house as when the fruit is perfected by fire heat, whilst Muscat of Alexandria speedily becomes spotted when not ripened to an amber colour. Alicante is an excellent keeper and always finishes well. West's St. Peter's also finishes well in a high temperature, and though not so imposing in appearance as some others, it is one of the best late Grapes. Gros Colman is simply magnificent in appearance, the berries 4 or more inches in circumference, the bunches about 4 lbs. in weight, and when well ripened it is not nearly so coarse and inferior in flavour as it is sometimes represented to be. It requires, however, a longer time to colour and ripen than the majority of late Grapes.

Gros Guillaume is really unsurpassed in imposing appearance, the bunches being large and the berries approaching Gros Colman in size, and when well ripened and coloured the quality is good. Golden Grapes are not at all to the fore as the black. Pearson's Golden Queen and Mrs. Pearson are good additions to this class of Grapes, and are more easily kept than Muscat of Alexandria but those can hardly be kept over the new year, therefore we have nothing better to offer than Trebbiano and Calabrian Raisin, with Syrian, as good companions to the thick-skinned black Grapes. They are large in bunch and berry, and when well ripened excellent in quality and good keepers. When well ripened to the shank, Mrs. Pince is one of the best of the thick-skinned varieties, with a decided Muscat flavour. With these varieties to maintain the supply up to May, the necessity of starting permanently planted Vines before December does not arise unless it is desired to have fresh ripe at an early date in spring. In that case it is preferable to take the early supply from Vines in pots than to start the permanently planted Vines so early. Vines in pots produce fruit but little inferior to that borne by those planted out, and often better, from the roots being inside, and where there is means of affording bottom heat success is certain, providing, of course, the canes are sufficiently strong and well ripened.

Early Forced Vines in Pots, &c.—Where leaves and stable litter have been prepared as advised in our last calendar, they should be placed on outside borders, and a quantity of the material introduced at that time to the interior of the house, which will produce a regular degree of heat and moisture without having to resort so much to fire heat and frequent sprinklings. Vines in pots plunged in bottom heat must not have a greater heat than 65° to 70° to begin with, augmenting it by bringing up the fermenting materials to the level of the pots, so as to raise it to 70° or 75° when the Vines are in leaf. Both Vines in pots and early forced Vines have ripened so late that, except under pressing circumstances, it will be sound practice to defer starting to as late a period as possible. Young Vines that have completed their growth should have a portion of the laterals cut off to admit light and air to the principal leaves and buds, thereby inducing earlier ripening of both wood and buds.

CUCUMBERS.—Place out at once the plants for fruiting in winter on hillock or ridges as near to the glass as the nature of the house and trellis will permit. Those not having the convenience of a house may obtain supplies of fruit by growing the plants in pots or boxes in Pine stoves or other sufficiently heated structures. Let the autumn-fruiting plants be regularly looked over once a week, removing any bad leaves and exhausted growths, training in young growth, pinching out the point of the shoots a joint or two beyond the fruit, avoiding overcropping and overcrowding, and removing male blossoms. Keep the temperature at 70° at night and 75° by day, advancing with 80° or 85° with sun heat, admitting a little air whenever the external air is favourable. Keep the glass clean, as every ray of light is now of consequence. Moderate the supply of water at the roots, not, however, permitting flagging.

MELONS.—The Melon season as regards dung-heated pits and frames may now be considered at an end. Any fruits yet remaining and fully grown may be cut and placed in a warm house to ripen. The latest plants in houses will require a night temperature of 70° to 75° by day by artificial means, advancing to 85° with sun heat, admitting a little air at every favourable opportunity. Sprinkling the paths, &c., will be necessary about 8 A.M. and 3 P.M. until the fruit is full grown, when a drier atmosphere will be advisable. Cut out all superfluous laterals, well thinning the old foliage, so that the fruit may have the full benefit of the autumn sun. Before the ground is soaked by rains secure the required quantity of compost for next year's crop—rather strong loam taken off with its turf, stacking grass side downwards, adding about a bushel of quicklime to each cartload in stacking it. It will be in capital condition by spring.

PINES.—All young plants should now be arranged so as to obtain the fullest benefit of light and air. As the sun heat diminishes a corresponding diminution of temperature should take place at night until it reaches the winter standard of 55° to 60° at night and 65° in the daytime. Ventilate freely whenever outside conditions are favourable, paying particular attention to watering. An inspection of the plants should be made about once a week, and whenever a plant needs water supply it copiously at about the temperature of the bed. Plants on which fruit is now appearing will be ripe at a time when other fruits are scarce, and should therefore be afforded a good position in the fruiting house. Continue 70° as the minimum temperature in the fruiting house, though on cold nights a decline of 5° may be allowed, and 5° more in mild weather—75° artificially by day and 80° to 90° from sun, closing the house at 80°, sprinkling as may be necessary the pathways when they become dry, and on sunny afternoons an occasional syringing will be advantageous, keeping the bottom heat regular at 85° to 90°.

PLANT HOUSES.

Primulas.—In moderately dry localities these plants may be safely left for a few weeks longer in cold frames, but in others it will be necessary to place them in light airy structures to insure their safety from damp. All, with the exception of those provided for spring flowering, should be placed in their largest pots and be grown close to the glass where plenty of air can be admitted to insure dwarf sturdy growth. The latest plants, if they are not in 3-inch pots, should be placed in them without delay. Water all carefully from the present time, and avoid extremes, for no condition will induce them to damp sooner than being first wet and then dry. Try to keep them as nearly as possible in an intermediate state for moisture. Soot water in a clear state will prove very beneficial to those now coming into flower. It is a good plan to top-dress these, especially if they are loose at the collar. They soon emit roots, and thus secure themselves to a large extent against damp.

Cinerarias.—Frame-room will now be plentiful, and these must be potted from time to time as they need more root-room. Give the plants plenty of room to develope themselves. If they are crowded, moisture will hang about them and cause them to damp. In the morning the plants will frequently be covered with dew, and the frames must be liberally ventilated so that this can be evaporated early in the day. No harm will result to the plants as long as this can be removed daily, but if allowed to hang about the plants several days in succession they will commence damping. With care, however, this can be avoided for some weeks to come. What watering is necessary should be done in the morning. The earliest plants that are required in flower as early as possible may be placed in a light airy structure. Weak stimulants may be given every time they need water. Stand them on moisture-holding material, for a dry base means destruction in a very short time to their lower foliage. Watch for aphides, and destroy them by light fumigations with tobacco directly they make their appearance.

Roman Hyacinths and Narcissus.—The earliest will be ready for removal from the plunging material. These should, if practicable, be placed in frames where they can be covered with a mat until their foliage naturally turns green. The object is to expose them gradually to the light, and if this is done no injury to their foliage will result. They will need liberal supplies of water from the present time.

Lily of the Valley.—As these come to hand it must be decided according to the quantity required at one time whether they are to be placed in pots, pans, or boxes. Our earliest spikes are obtained from single crowns plunged amongst cocoa-nut fibre refuse just as they are received. Before introducing them into heat, however, lay them in ashes outside until they have been exposed to one or more sharp frosts. They force all the quicker and easier by this seeming delay at the start. Clumps should be placed into 5-inch pots and all may be stood outside or plunged, leaving the crowns exposed.

Spiræas.—Early frosts have completed the growth of these plants, and they can be lifted and potted as opportunity offers. Plants with small weak crowns may be divided and planted for forcing purposes another year. On the whole the crowns are not so ripe as they have been for several years, and we have doubts whether they will flower as freely as they have done for several years past. Place them outside after they are potted, and to be on the safe side pot up a good number of imported clumps.

Dielytra spectabilis.—Lift these and place the best crowns into 5-inch pots, the small ones being reserved for planting again. These after potting can be placed in cold frames or may be placed outside where slight protection to their crowns can be given in case of sharp frosts.

Viburnum Opulus.—Lift year-old plants from outside and place them in pots so that they will make a few roots before the foliage falls. Plunge the pots in a sunny position outside where they can remain the whole of the summer. When lifted early and placed in 5 and 6-inch pots they start away freely in spring and make splendid plants for forcing by the following autumn. Deutzias may be lifted, but these should be wintered and started into growth in cold frames. For the present place them outside and syringe freely on all drying occasions to keep their foliage fresh as long as possible.

THE BEE-KEEPER.

FINAL PREPARATIONS FOR WINTER.

In many apiaries weeds and rank grass are allowed to luxuriate. This is both careless and unprofitable. The lives of many bees will be saved if in the immediate neighbourhood of the hives the herbage is kept short and close, but still greater is the benefit when a bare space covered with cinders can be given in the immediate front and at the sides of each stock. The method of arrangement of the stocks should be systematic without being uniform. On no account should hives be placed in a straight line. Some may be set back a few places, and some may be brought forward, or these may even be placed with advantage, under certain circumstances, in a quincunx. Those hives which rest on wooden supports should at once undergo a very careful examination, and the sooner any defects are remedied the better. It is possible that some hives may be cracked owing to the contraction of the wood or to imperfect construction, and it is most important that all such "damp traps" should at once be filled up and receive a good coat of thick paint. In this way much danger and loss may be averted with very little trouble. All surplus cases must be removed, but on no account should the body box be contracted. All store should be sealed, and the inside of every hive ought to be clean and dry. Warm coverings may at once be brought into use, and every stock must at once be placed in a position to withstand the coming winter without the necessity for any further and later, and consequently objectionable, manipulation.

Everything that can be done for the benefit of the stocks should be done, and that without delay while the weather is fine, warm, and suitable. A box of cork dust or chaff placed upon one thickness of felt and a piece of ticking is a very excellent winter covering, and one which can hardly be improved upon. Care must be taken to trap any mice which are known to be in the vicinity of the stocks, and all boards or bricks which may assist these animals in gaining an entrance to the stocks must be removed to a position in which they can be of no such use to these bee enemies. An apiary littered with boxes, supers, boards, bricks, and other remnants looks untidy and betrays the character of the bee-keeper. Neatness may not be a necessary adjunct to success, but where we find a neat and orderly arrangement of the apiary and its belongings, we expect with certainty to hear of success in the conduct of the industry.

Most bee-keepers, and especially those who have all to learn, may, during the winter months, study with advantage the theory of bee-keeping, and they can hardly employ their spare time more usefully than in the study of a standard work upon the subject, and we would especially commend to those who require a complete theoretical knowledge, Mr. Cheshire's "Bees and Bee-keeping," and Mr. Webster's latest work on the subject. These books are very exhaustive, and are written with painstaking care, and can hardly be surpassed, but it is hardly necessary to remind the bee-keeper that even after having carefully studied such works as these he is very far removed from being a practical bee-keeper. Theoretical knowledge is the basis of practical success, but practical success does not necessarily follow from a knowledge of the theory.

There is one lesson which many bee-keepers who have to learn upon others for support cannot too well remember, and that is the necessity for following out the instructions given them even down to the minutest detail. When a bee-keeper gives one who has less knowledge than himself instrucions he does so, generally speaking, in a clear and concise manner, and provided those details are closely followed out success is practically assured. But the person who seeks instruction too often thinks that such and such a thing may be omitted. Acting upon such ideas he carries out his instructions in a half-hearted sort of manner and then complains of failure. No doubt many bee-keepers fail to carry out the instructions of those who know more than themselves, because they are unable to see the utility of some parts of these instructions, and that is one reason why we, at the risk of repeating ourselves, always endeavour to give a reason for every instruction we give; but such reasons cannot be given in every case, because if such reasons were so given our articles would assume such vast proportions that the Editor would either at once condemn them to the waste paper basket or, at any rate, prune them to a reasonable extent. A reflecting man with a knowlege of the theory of bee-keeping can often supply a reason for a certain instruction, and a man who is not endowed with a capacity for reflection, or who has not a sufficient knowledge of the theory, has only to follow the instructions he receives in their entirety, as he is hardly likely, in his state of ignorance, to improve upon them, and is almost certain in his presumption to bring about a disastrous

result. Children must first creep, then walk, and afterwards run. A novice in bee-keeping is in exactly the same position, and if he tries to run while he is hardly able to creep the fall of that novice will be great, and his lamentation exceedingly loud. He has only himself to blame and must bear the loss, consoling himself by the knowledge that he will learn by experience. We do not desire to discourage the ardent bee-keeper, but only to warn him not to rush headlong into trouble. When he has a little experience, and begins to feel his legs, then he may begin to play antics and perform those feats which men who have the full use of their limbs are able to accomplish; but in the beginning his pace must be slow and sure, and though he may think the way somewhat long and weary, he will discover that the shorter road is often the longest to him who does not know the country over which he has to pass.—FELIX.

NOTES ON BEES.

AT THE HEATHER.

SINCE the discussion last year as to how far bees should be placed from or near to the Heather I have been experimenting and taking evidence on the subject. Bees placed a quarter of a mile from it gathered 6 lbs. more than those did a mile further away. One hundred hives standing right in the Heather at the bend of what may be termed a right angle of miles of Heather both ways, but had to fly for the superior Heather a mile, made from 10 to 15 lbs. less than about the same number placed one mile nearer. The greatest gathering of honey was made by crossed Cyprians and Syrians of my own stocks, so much in advance of others as to give surplus in this very unfavourable year for bees, thus maintaining their previous good honey gathering qualities, which is so pronounced as to enable me to dispense with feeding for a period of nearly twelve years now since I first had Cyprians. The greatest feat, however, of any one spring stock was a Carniolian I presented in November last to an old bee-keeper of more than fifty years for gratuitous and voluntary services in assisting me with my bees and garden. Previous to that date I gave him what I thought a choice Syrian queen, but it had swarmed at the Heather, and the queen regnant was a drone breeder. To make good that loss I gave him a choice Carniolian; it swarmed twice, and the gross weights of the three at the beginning of October were—old stock 80 lbs., first swarm 119 lbs, second swarms 52 lbs., total 251 lbs. The tare of these hives is 60 lbs. The first swarm kept itself from the beginning of August until the beginning of October, replaced brood with honey, and added 50 lbs. to the good. The old stock and second swarm did the same, but added about 15 lbs. less than the prime swarm. The second swarm, however, filled a super of beautiful Heather comb—the only one worth speaking of in the locality. The bees placed furthest from the Heather have lost many bees, while those near it have maintained their number.

I have considerable more evidence which might be produced, but think the foregoing sufficient to establish the fact that the nearer the bees are placed to the working ground the better, and that foreign varieties of bees far outstrip the native bee in the production of honey. I had only one native hive of bees strong, strong, too, in numbers, and it did not make an ounce. Although one hive is not sufficient as a test, still it is ominous, and fully corroborates our past experience.

TRANSPOSING SUPERS.

I am still more convinced than ever that it is a mistake to place an empty between the stock hive and full one. In every case of the kind I have witnessed this year the full super was emptied. Moreover, it is unnatural for bees to work in the manner indicated. They never separate themselves to build combs, but maintain an unbroken cluster.

COMBINATION HIVE.

It may perhaps interest your readers, and particularly "A Hallamshire Bee-keeper," to learn that all the greatest weights have been made by bees in the "storifying" hives. Those in small hives of the "Standard" pattern have done nothing, so we north of the Tweed have made a score this year in that respect. Three hives of the Lanarkshire type, and three of Abbott's "Combination" type, the property of a gentleman at Lanark, were intended for a fair trial. The Lanarkshire ones had pushed ahead of the Combination ones during June and July, but there was no competition at the Heather, as the three Combination hives were smothered, and their contents wrought into a jelly on the way to the Heather. Here the words of their advocate, which were delivered before the B.B.K.A., "That the hive suitable for one locality was not that for another," was fully verified. But side by side of them were hives suitable for any and every locality or country.

It is now more than thirty years since I made a hive on this principle, but differing widely from it, being made upon the bevel, rising behind about 9 or 10 inches, the frames being bevelled to suit the angle of the hive, in order to make it available for taking to and from the Heather. Two boxes about half the length of the other were made to receive the frames. The stand, too, as well as the supers, were all made to an angle. This hive presented some advantages over other forms, notably that of supering, as like "A Hallamshire Bee-keeper," I have long since known that bees stored their honey overhead, and in the warmest place, and not behind the frames, the coldest part of the hive.

PREPARING FOR WINTER.

It should be borne in mind that the less honey bees require to consume during the winter the more healthy will the colony be. The best way to secure this is to prepare now and never more disturb the bees until the spring is advanced. One manipulation at the wrong time is sufficient to insure the destruction of the best hive. On no pretext whatever should cold air be admitted to the hive from above, and the more cosy they are kept the better.

Meadow hay forms the best protection to hives both on the sides and the top; a piece of felt should cover the hay on sides and a watertight roof of some sort raised a little from the hay with ample ventilation at the eaves. This covering is perhaps not quite so neat-looking as wood, and loose hay never looks well in an otherwise well kept garden.

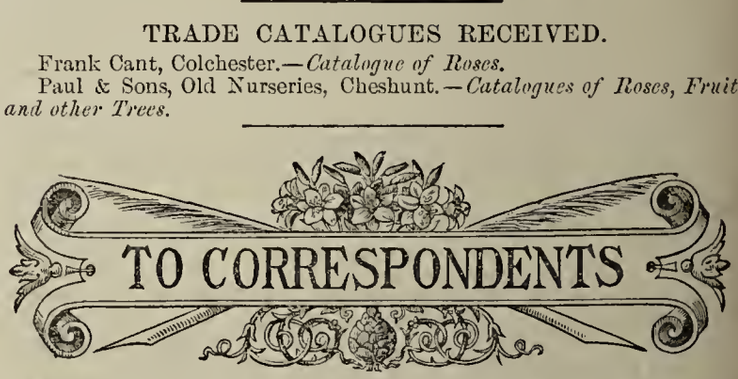
Outside cases are sometimes heavy to lift, and always occupy the same space whether tenanted or not. A good substitute, and much better in most respects, are four panels or shutters the full height of hive and two tiers or supers. Perhaps the cheapest and most simple plan of fastening these together is by brass screws, two in each side. The wood should not be more than half an inch for the uprights and three-eighths for the bars. That size is necessary to cover handles and fastenings.

This makes a neat and cheap cover which anyone can make, and is a thorough protection against wind and water. If desirable, the space between the bars may be filled with hay, or a piece of felt may be tacked on. Of course an entrance corresponding with entrance to hive must be left, and the roof may be from a sheet of iron or zinc to an expensive and as ornamental a roof as the bee-keeper may desire. This form of protection is the only one of double casing that prevents decay in hives.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Frank Cant, Colchester.—*Catalogue of Roses.*

Paul & Sons, Old Nurseries, Cheshunt.—*Catalogues of Roses, Fruit and other Trees.*



*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

To Inquirers.—Answers to several letters, some of which were late in arrival, must be deferred till next week.

Market Terms (*R. C.*).—A pad of Plums varies from 48 lbs. to 56 lbs. There are five dozen Cabbages in a tally, but the number of Onions in a bunch and the price vary considerably.

Chrysanthemums (*D. B. C.*).—During the next few weeks you will find ample information of the character required. From the middle of October to the end of December Chrysanthemum news, notes, and articles are most abundant.

Plum-shaped Tomato (*G. H.*).—The fruits you have sent are

attractive in a dish, and good in quality. The variety is either Neshit's Victoria or a selection from it. These small Plum-shaped Tomatoes are included in the dessert of many families where other than sweet and luscious fruits are enjoyed.

Dessert Pears (*J. Truro*).—As you desire a list of varieties "according to the report of the Fruit Committee," you cannot, perhaps, do better than read the reports of the National Fruit Conference that is being held at Chiswick this week. There is no gardeners' benefit society in Liverpool. The address of the Secretary of the Liverpool Horticultural Association is Mr. E. Bridge, Tarbock Road, Huyton, Liverpool.

Lapageria Unhealthy (*G. H. C.*).—Are you sure the plant has had sufficient water? With free drainage it is not easy to give too much in the summer. A dry atmosphere and much sun are also unfavourable to free growth and fine leaves. Those sent lead us to think either the soil has not been kept moist enough, or the air kept too dry. We assume the compost is suitable, but this you do not indicate.

Mildew on Cinerarias (*W. A. M.*).—Leaves that are checked in growth like the small one sent, we should burn, but those only slightly affected we should endeavour to save, and we should not like to destroy the plants, at least at present. Try the effect of black sulphur, so holding the leaves that the points of the fine hairs face the application; the sulphur then may fall between them. It is the downy covering that we suspect prevents its reaching the mildew. We should also maintain a drier atmosphere if you can do so. The soil is perhaps fully too rich, and the leaves have not been able to elaborate the crude sap that has been abundantly afforded.

Sowing Orchid Seed (*M. N. S.*).—Experience has shown that there is no method equal to scattering the seed on the sphagnum in which a plant is growing freely and receives proper attention in watering, so that the sphagnum is kept fresh. No attempt must he made to cover the seed, and it must not be displaced by watering. The seed may he sown as soon as ripe, or in early spring. It is delicate work raising Orchids from seed, then establishing the plants, and only experts or very careful cultivators can hope to succeed. If you succeed in raising plants you must he prepared to give them the best attention for about ten years before they will flower. Some seedlings are fifteen years before flowers are produced, and then the varieties may not he superior, but, on the other hand, some may prove of value.

Araucaria Unhealthy (*W. Smith*).—We have seen many such instances as the one you hring to our notice, and in almost every case where injury has not been caused by frost the degeneration of the specimens has been due to soil exhaustion. The remedy is to remove the old soil down to the roots and beyond them, and if these are in a medium almost as dry as dust to apply pure water copiously, following a day or two afterwards with liquid manure. After the soil has been rendered sufficiently moist cover the roots with fresh compost, turfy loam, wood ashes, and decayed vegetable matter in equal parts, and surface the whole with manure. We have seen many specimens invigorated by this practice, and you cannot too soon apply the same remedy. In some cases the decay of the branches results from the roots having penetrated stagnant soil, and this ease drainage must he afforded as well as top-dressing.

Trees and Shrubs for Chalk Banks (*W.*).—Of all trees the most likely to succeed is the Beech (Fagus sylvatica), which we should use chiefly along with others of the same genus—viz., Fern-leaved and Purple-leaved. Birch, as you have found, does fairly. The Hazel, Privet, and Blackthorn will afford the "cover" required. Bird Cherry (Cerasus Padus), and the Virginian form (C. Padus virginiana), Scotch Laburnum, Mountain Ash, Gold-variegated Elder (common Elder being desirable as shelter), Scarlet-fruited Elder, Euonymus europæus, Elms, Exeter and English White Beam, Lime, red-twigged and Snowy Mespilus may be added if you wish for greater variety. In evergreens, English Yew and common Holly, with Mahonia aquifolia, Hypericum calycinum, Broom, and common Laurel (in the lowest situations) may be used. Corsican and Austrian Pine would probably succeed, particularly the latter. Your second letter cannot be answered this week.

Marechal Niel Rose (*R. P.*).—You must keep the house in which your Maréchal Niel Rose is growing as cool as possible until the end of December, so as to ripen the wood and bring the growth to a complete standstill. Early in January keep the house closer, say 45° to 50° at night, with a rise of 5° or 10° by day, by closing early in the day while the sun is upon it, and on fine days syringe the plant gently until it shows signs of bursting into growth. As soon as this stage is reached the temperature may he raised gradually 5° or 10° by night, as the young shoots that will bear the flowers lengthen out. Never should a higher temperature than 60° he maintained at night, and this only when very mild externally. Nothing is gained by a high temperature in forcing Roses into bloom, and it is much better to allow the temperature to fall to 50° by morning than keep it at the highest point given when the weather is very cold and frosty. Take every advantage of the sun to close the house early in the afternoon, for no harm will be done if the temperature increases, say to 80° or 85° for a few hours by sun heat alone. Be careful to avoid cold draughts striking directly upon the young tender foliage, for nothing will cause an attack of mildew sooner. You had better allow the temperature of the house to run up considerably than admit cold currents of air to the tender growths of your Rose tree. If you follow the directions given we do not think you will fail to have Rose blooms early in March.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. K.*).—The Plums having been placed without any packing in a half-filled tin box and nothing to keep them firm were shaken into a jam-like mass on arrival. (*G. Cooke*).—Your Grape is, we think, the Trebhiano, but note if the leaves are downy beneath. The fruit is well grown and ripened, and represents the variety in its best condition. (*T. P.*).—1, Like Beurré Diel. 2, Fondante d'Automne. 3, Comte de Lamy. 4, Beurré Diel. 5, Comte de Flandre. 6, Swan's Egg. (*Dieo*).—1, Van Mons Léon Leclerc. 2, Marie Louise. 3, Louise Bonne of Jersey. 4, Souvenir du Congrès. The Apple, Cox's Pomona. The others not recognised. (*Dr. Lowther*).—1, Chaumontel. 5, Easter Beurré. (*G. G.*).—1, Coe's Golden Drop. 3, Coekle's Pippin. 4, Nonesuch. 5, Hoary Morning. (*Y. Z.*).—1, Beurré Hardy. 2, Knight's Pengethley. 3, Rivers' Monarch. 4, Yorkshire Greening. 5, Not known. 6, Braddick's Nonpareil. (*P. Le C.*).—1, Cellini. 2, Reinette du Canada. 3, Cox's Pomona. 4, Cox's Orange Pippin. 5, Dutch Mignonne. 6, Northern Greening. (*J. and W. Birch*).—A, Yorkshire Greening. B, Golden Spire.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should hear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*E. H.*).—The specimen was not a good one, but it resembles Rudbeckia hirta. (*J. S.*).—1, Asplenium bulhiferum. 2, Adiantum Capillus-Veneris. 3, Insufficient without spores. 4, Pteris cretica. 5, Polypodium vulgare. 6, Adiantum cuneatum. (*W. R.*).—1, Sibthorpia europæa. Yes, there is a variegated form, but it is rather difficult to grow. 2, Masdevallia Harryana.

COVENT GARDEN MARKET.—October 17th.

IMPROVEMENT in the demand for Peaches, otherwise no alteration.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
Cherries, ½ sieve	0	0		0	0	Oranges, per 100	4	0		9	0
Cobs, 100 lbs.	60	0		65	0	Peaches, dozen	2	0		6	0
Currants (Red), ½ sieve	0	0		0	0	Pears, dozen	0	9		1	6
,, (Black), ½ sieve	0	0		0	0	Plums, ½ sieve	2	0		4	0
Grapes, per lb.	0	6		2	6	St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	2		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	8	0		14	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve				0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	3	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	7
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Marguerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	6	0		12	0	Mignonette, 12 bunches	3	0		6	0
Asters, dozen bunches	6	0		12	0	Pansies, 12 bchs	0	0		0	0
,, French, per bunch	1	6		2	6	Pelargoniums, 12 trusses	1	0		1	6
Azalea, 12 sprays	1	0		2	0	,, scarlet, 12 trusses	0	6		0	9
Bouvardias, bunch	0	3		1	0	Pyrethrum, doz. bunches	2	0		4	0
Calceolaria, 12 bunches	0	0		0	0	Roses, Red, 12 blooms	0	6		1	0
Camellias, 12 blooms	3	0		4	0	,, (indoor), dozen	1	0		2	0
Carnations, 12 blooms	1	0		2	0	,, Tea, dozen	2	0		4	0
,, 12 bunches	0	0		0	0	,, yellow	2	0		4	0
Chrysanthemums, 12 bl.	1	0		4	0	Stephanotis, 12 sprays	4	0		6	0
,, 12 bchs.	6	0		12	0	Stocks, 12 bunches	0	0		0	0
Cornflower, 12 bunches	0	0		0	0	Sweet Peas, dozen	0	0		0	0
Dahlias, 12 bunches	0	0		0	0	Sweet Sultan, 12 bunches	0	0		0	0
Daisies, 12 bunches	0	0		0	0	Tropæolum, 12 bunches	1	0		2	0
Eucharis, dozen	4	0		6	0	Tuberoses, 12 blooms	0	6		1	0
Gardenias, 12 blooms	1	6		4	0	Gladiolus, 12 sprays	3	0		4	0
Lapageria, 12 blooms	1	0		2	6	Violets, 12 bunches	1	0		1	6
Lavender, 12 bunches	0	0		0	0	,, Parme (French), per bunch	3	6		5	0
Lilium longiflorum, 12 blooms	6	0		9	0	,, dark	1	6		2	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Foliage Plants, var., each	2	0	to	10	0
Arbor vitæ (golden) dozen	12	0		24	0	Fuchsia, dozen pots	3	0		6	0
Asters, 12 pots	4	0		9	0	Genista, per dozen	6	0		0	0
Balsams, per dozen	0	0		0	0	Heliotrope, dozen pots	0	0		0	0
Begonia, various, per doz.	4	0		9	0	Ivy Geranium	0	0		0	0
Chrysanthemum, doz.	4	0		9	0	Hydrangea, dozen	6	0		12	0
,, large, doz.	15	0		24	0	Lilium, various, doz. pots	12	0		21	0
Coleus, dozen	2	0		4	0	Marguerite Daisy, dozen	6	0		12	0
Crassula, dozen	0	0		0	0	Mignonette, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Musk, dozen pots	0	0		0	0
,, viridis, dozen	12	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	0	0		0	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0



LIVE STOCK.

Michaelmas is the term in most districts when farms are taken in hand, and particular attention is given to the selection of animals suitable for the special purpose for which the farm is required. Under the comprehensive term of live stock, all animals kept thereon are included, and as frequent inquiries reach us as to which are the most suitable for the home farmer, we purpose calling special attention to the matter this week.

Before all things the home farm is intended to afford a full and constant supply of farm produce throughout the year for consumption at the hall, castle, or mansion, as the case may be. For such supply to be satisfactory, every article sent from the farm to the kitchen must be of the highest possible degree of excellence. To insure this, it is a matter of primary importance to make a careful selection of live stock. Jersey cows, Southdown sheep, Highland cattle, Berkshire or Tamworth pigs, black Norfolk Turkeys, pintail Ducks, Dorking chickens, geese, Guinea fowls and pigeons, are among the most desirable stock for the purpose, milk, cream, butter, beef, mutton, pork, hams, chaps, bacon, lard, eggs, and poultry being always in demand; and we hope, as skill and knowledge in dairy management improves, that cheese will be added to the list, for there can be no good reason why really good cheese should not be forthcoming from home farms generally as well as good butter.

In the selection of cows we should certainly advise beginners to confine themselves to pure bred animals, either Jerseys, Guernseys, Ayrshires, or Kerrics. All four breeds are excellent, and a novice can hardly go wrong among them, provided due care is taken in the selection of cows to form a herd. No doubt cross-bred cows, such as we have in Guernseys and Shorthorns, Jerseys and Ayrshires Dutch and Redpolls, afford more useful animals, but such cross breeding is only advisable in the hands of farmers of much experience. The reputation of Jerseys for richness of milk is so high that we cannot wonder at the general preference for cows of that breed, but it should never be forgotten that the Jersey is a delicate animal, requiring extra care in its food and shelter. The Guernsey is a more robust animal of larger frame, and its milk is very rich. We have found it altogether more useful than the Jersey, the dairy produce being equally valuable and generally more abundant, while the cows are invaluable for cross-breeding purposes. Both Ayrshires and Kerries are hardy races, and by the exercise of care in selection and breeding many valuable herds of them have been formed. The hardy little Kerries are our especial favourites, but we question if they are yet sufficiently plentiful in this country for really good cows to be obtained easily. The best way of laying the foundation of a herd of them is to purchase two or three cows and a bull of known excellence at one of the metropolitan dairy shows. The price for such choice animals is high, but it is much better and is really more economical to give it than to run the risk involved in the purchase of cheap imported animals of which not one in twenty may prove useful dairy cows.

Of pigs, special breeds may be indulged in for a fancy, but for all practical purposes a little care in selection from local breeds will suffice. Porkers of from 50 to 60 lbs. weight afford the best pork for roasting, pickling slightly, and for all other purposes for which fresh pork is required in the kitchen. For bacon and hams fat pigs of from 200 to 300 lbs. weight are required, and there must be enough of them brought on for killing and curing during the winter months to afford a supply of bacon and lard for the year. To insure a full supply and to meet emergencies there must always be a moderate surplus over ordinary requirements, and there should be no difficulty in the disposal of such surplus if it is not required for home consumption.

In the management of poultry some of the chief points are to select fowls which have a full plump breast and legs of moderate size to afford nice chickens for table; to save plenty of poults from a few early successional broods to afford an autumn and winter supply of eggs; to have as many early broods of Turkeys as possible, late birds being notoriously delicate and unsatisfactory. Turkey poults should always be sufficiently forward to be ready for table by the end of September. Where poultry is reared regularly in considerable numbers there are often serious losses among the early broods from gapes. This may be avoided by keeping them on fresh land or on turf where chickens have not been reared before.

WORK ON THE HOME FARM.

With the sowing of Rye and Tares ended we can now turn in real earnest to Wheat-sowing where it can be done. But much of the heavy land ploughed for Wheat cannot be sown till the soil is softened by rain. We can wait for rain with a feeling of certainty that it will not be long in coming at this season of the year, and meanwhile sowing will be pushed on briskly on light land and mixed soil farms. We are much pleased with the appearance of the seed Salvator Wheat, which we have purchased at the fancy price of guinea a bushel. The grain is very large, it is white, and if only the yield does credit to the vendor's statement that it is 88 bushels an acre we shall have made a profitable investment. The weak point about this Wheat is the fact of the straw being very stout, and growing to a height of from 6 to 7 feet. In reality it is a kind of anomaly, for such stout straw is not likely to be laid by wind and rain; this is an advantage. On the other hand, very stout straw is frequently so coarse in texture that it is unfit for use for horses, at any rate for carriage horses, hunters, or race horses, and therefore it does not meet with the brisk sale of ordinary Wheat straw; this is a disadvantage. We send large quantities of straw to the Newmarket training stables, and cannot dispose of Rivett Wheat straw there.

So many Barley ears fell upon the stubbles in harvest that we have had to purchase fifty more store pigs for the home farm stubbles. We did not go to the open market for these pigs, but bought them of a tenant farmer, who had cleared his stubbles, and wanted to realise as much cash as he could for Michaelmas payments. We got fifty strong healthy animals at an average price of 15*s.* 6*d.* That price will answer very well indeed, for the pigs will find an abundance of food upon the stubbles for the next three weeks, and then they will be confined to a yard, and be fed with barleymeal ground from the damp and tail corn.

OUR LETTER BOX.

Wheat Manure (*J. L.*).—No farmyard manure is required with the artificial manure which is recommended on page 326. If you have farmyard manure it may be used for an autumn dressing now, and then a spring dressing of 1½ cwt. per acre of nitrate of soda will suffice without the addition of any of the other artificial manures enumerated.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. October.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 7	30.136	38.7	35.2	N.	45.8	50.5	33.4	92.3	28.2	—
Monday..... 8	30.222	43.5	38.7	N.	45.2	53.3	28.2	92.8	21.3	—
Tuesday 9	30.155	45.3	42.7	N.E.	45.0	56.5	38.0	94.8	27.2	—
Wednesday.. 10	30.082	46.9	44.2	N.	45.0	60.2	40.8	85.8	30.8	—
Thursday 11	30.136	47.4	46.3	S.W.	46.5	56.4	44.8	85.2	39.4	—
Friday 12	30.043	46.8	45.8	S.W.	46.9	59.3	41.8	93.3	34.6	0.015
Saturday 13	29.883	48.8	43.6	N.W.	47.7	55.2	45.4	95.8	38.3	—
	30.091	45.3	42.4		46.0	55.9	38.9	91.6	31.4	0.015

REMARKS.

7th.—Fine autumn day.
8th.—Bright and pleasant throughout.
9th.—Bright morning, fine warm day.
10th.—Cloudy early; fine warm day.
11th.—Cloudy morning; bright afternoon and evening.
12th.—Fine and generally bright day; cloudy evening; showers at night.
13th.—Cloudless early, fine throughout.

An almost rainless week of lovely autumn weather. Temperature 4° above that of the preceding week, but still about 3° below the average.—G. J. Symons.

AN AWAKENING.

NO matter what may be said or thought on the lack of earnestness nowadays in the cause of horticulture as compared with the energy of its representatives in past times, the events of last week were quite sufficient to indicate that only opportunities are desired for showing that the old spirit of devotion to the work of cultivation has not departed, but is as active as ever. This was proved to demonstration. When we find cultivators at no small trouble, and not without expense to themselves, collecting and sending samples of fruit from various parts of the kingdom, and communicatiug information thereon of substantial value, without a thought of pecuniary recompense, but with the sole object of helping forward an important movement; when we find gentlemen come from two to four hundred miles to read papers, and specialists, wherever they may reside, giving their time and their talents in furtherence of fruit cultivation and distribution; when we find committees and censors rendering their services willingly and gratuitously, and without even expecting or receiving thanks for their endeavours; when we find gardeners and others assembling, if not "in their thousands," yet in such numbers as to form a great dense crowd, hanging on the utterances of the speakers, taking part in animating discussions, cheering good points and passing good resolutions; when we find all this, as we found it at Chiswick on the occasion of the Apple and Pear Conference, at least three important facts appear to stand out bold and clear. 1, That the horticultural spirit is very much alive and horticultural enterprise increasing. 2, That the Royal Horticultural Society has many friends—staunch, true, and willing to work for it and the objects for which it exists. 3, That Chiswick has not lost its charm on the horticultural community, but is an attracting power when used as a field of operations for the promotion of objects of scientific and practical value in accordance with the instincts of the gardening community.

The deductions that appear to be the not unnatural outcome of those facts are these—1, That earnestness in action in the fulfilment of definite objects of substantial horticultural value be encouraged. 2, That the Council of the Royal Horticultural Society make use of its friends, and not count them as enemies if their zeal in its interest impels them to move a step onward now and then beyond the prescribed lines. 3, That Chiswick be made, as far as it is possible to make it, the seat and the centre of scientific, practical, and experimental horticulture, on a broad basis for national purposes. Until action has been taken on those lines, and pursued earnestly and perseveringly, it cannot be known to what extent support will be rendered to the Society by the horticultural community. It may be said by the Council, as it was said by one of its members (Mr. Smee) at the close of the last meeting, We are quite willing, and even desirous, of developing the resources of Chiswick, but this can only be done by an increase of Fellows and funds. There has been an increase of Fellows, but Chiswick has, so far, not apparently benefited. There has been no surplus for that purpose. It is for the Council to consider if a reduction cannot be made in administrative charges, which would be tantamount to an increase of Fellows, and it can scarcely be doubted that more would follow as the result of a determination to make Chiswick the first object of consideration. At present work there cannot be done well and systematically.

There was no mistaking the desire of the Conference meetings, which were not composed of a body of mere sightseers, that a change should be instituted. So certain were some half dozen men who move among the multitude of gauging the feeling of the majority of those who are either Fellows of the Society or deeply interested in the work it ought to do, that no difficulty was felt in formulating resolutions expressing their wishes. One of these was passed with only four dissentients, and it is practically certain there would not have been one if it had not been put as an amendment to a motion of a restrictive nature dealing with railway charges for fruit. The passing of those resolutions was one of the most important results of the Conference, and as such they demand prominence, and are certain to receive the serious attention of the Council.

The resolution framed by Mr. Hibberd was not concerted, and as will be seen is of wide scope. It was seconded by Mr. J. Corner, and is as follows:—

"That a conspicuous result of the Conference this day concluded is to make it evident that the subject of commercial fruit culture is one of great and growing public interest, and that there exists a corresponding desire to remove or modify the various impediments that law, usage, and misconception of facts have created and sustained against it. The Royal Horticultural Society, having special facilities for obtaining and diffusing information on all that relates to horticulture, this Conference respectfully requests the appointment by the Council of a Law and Parliamentary Committee for the consideration of the impediments above referred to." Mr. Tallerman then moved as an addendum, "That in the event of the Committee being appointed, this Conference desires to urge the early consideration of the question of railway charges as affecting the growers of fruit and vegetables." This was seconded by Mr. P. Crowley, and also passed.

The remaining resolution was prepared by Messrs. J. Wright and B. Wynne, members of the Fruit and Floral Committees respectively, in consultation with Mr. G. Bunyard as a representative nurseryman, and Mr. M. Dunn of Dalkeith as a representative provincial gardener. After being printed it was revised and expanded by Dr. Maxwell T. Masters, F.R.S., and received his prompt and powerful support. It was to have been proposed by Mr. E. J. Baillie, F.L.S. (of Messrs. Dickson, Chester, Limited), but that gentleman had to leave immediately after reading his excellent paper, at the close of which he expressed the pleasure he had in attending the Conference, and he "thought that the Royal Horticultural Society should be made the centre of a national education for the promotion and advancement of horticulture. It seemed to him that there were resources at the command of the Council which could not be got in any other centre in England, and it was almost a disgrace, if not a disaster, that the best use nationally should not be made of them." These sentiments were much applauded.

Mr. Dunn then rose to propose the resolution that was in the hands of most of the audience, and had a warm reception. He congratulated the Society on the success of the important gathering, the particulars of which would be read with satisfaction by gardeners all over the kingdom. He was not a Fellow of the Society because its proceedings were not of sufficient importance to him and provincial gardeners generally, but if Chiswick were turned to the best account, and conferences of this useful nature held periodically, information of value to all would be obtained, and he would then have pleasure in joining the Society, doing all that he possibly could for it, and he had no doubt others would do the same who did not at present belong to it for the reasons above stated. Here is the resolution:—

"In view of the great public advantages that have accrued from the previous Conferences held in these gardens, and the marked success of the present one, members of the Executive Committee of this Conference, Fellows of the Royal Horticultural Society, and other horticulturists here assembled, who are deeply interested in the Society's welfare and in the important question of developing the progress of scientific and economic horticulture, including especially the fruit-growing capabilities of the country, respectfully

submit for the earnest consideration of the Council of the Society the desirability of concentrating the Society's resources to the utmost extent upon the maintenance of the Chiswick Garden, so as to enable it to fulfil its mission as the national exponent of practical and experimental horticulture." (Applause.)

Dr. Masters seconded in a speech of great weight and in cogency of argument practically unanswerable. Messrs. Wright, Roupell and others supported, then Mr. Veitch (the Chairman) rose and said, "I now put this resolution to the meeting, all who are in favour of it will signify the same in the usual manner." Almost before the words were out of his mouth up went a forest of hands. "Now to the contrary. None. Carried unanimously." Thus the last of a successful series of meetings closed in animation and happy harmony, but not before a strong vote of thanks was conveyed to the Rev. W. Wilks, the Secretary of the Society, for his unremitting attendance and active work throughout the week, and to the Chairman of the meeting.

It now remains for the governing authorities to deliberate on the above adopted views of a large body of supporters, and in due time to devise a plan of action on the lines proposed. No one doubts the good intentions of the Council and their strong desire to make the Society popular and useful, and few will begrudge the provision of suitable rooms in London for meetings and administrative work, or to the holding of metropolitan shows occasionally that shall be large enough to command public attention and worthily represent high class horticulture, provided real and earnest action is taken in developing the resources of the garden at Chiswick for the purposes indicated in the resolution.

ROYAL HORTICULTURAL SOCIETY.

CHISWICK.

NATIONAL APPLE AND PEAR CONFERENCE.

OCTOBER 16TH TO 20TH, 1888.

THE FOLLOWING IS A LIST OF VARIETIES TO WHICH CERTIFICATES OF MERIT WERE AWARDED.

APPLES.	EXHIBITOR.
Adams' Pearmain	From Mr. G. Griffin.
" "	Mr. C. Turner.
Alexander	Messrs. G. Bunyard & Co.
"	Messrs. J. Veitch & Sons.
Alfriston	Mr. M. Dunn.
Alma Pippin	Messrs. W. & E. Wells.
Annie Elizabeth	Mr. C. G. Sclater.
" "	Mr. W. Roupell.
Baumann's Red Reinette	Mr. C. Ross.
" " "	Messrs. J. Veitch & Sons.
Beauty of Kent	Mr. T. Bunyard.
" "	Mr. J. Roberts.
Bismarck	Messrs. G. Bunyard & Co.
"	Messrs. J. Veitch & Sons.
Blenheim Pippin	Mr. G. W. Cummins.
" "	Messrs. Saltmarsh & Sons.
" "	Mr. C. G. Sclater.
Bramley's Seedling	Messrs. J. Cheal & Sons.
" "	Messrs. J. Veitch & Sons.
" "	Mr. W. H. Frettingham.
" "	Mr. H. Merryweather.
" "	Messrs. R. Veitch & Son.
Cellini	Messrs. J. Veitch & Sons.
"	Mr. M. Dunn.
Cockle's Pippin	Messrs. Paul & Son.
" "	Messrs. J. Veitch & Sons.
" "	Mr. H. G. Oclee.
Court Pendû Plat	Mr. W. Crump.
Cox's Orange Pippin	Mr. M. Dunn.
" " "	Messrs. Paul & Son.
" " "	Messrs. T. Rivers & Son.
" " "	Mr. W. Crump.
" " "	Mr. R. Dean.
" " "	Rev. W. Wilks.
" " "	Mr. A. McDonald.
" " "	Mr. A. Waterman.
Cox's Pomona	Mr. J. Roberts.
" "	Mr. G. W. Cummins.
" "	Messrs. G. Bunyard & Co.
" "	Mr. M. Dunn.
" "	Mr. J. Hudson.
Domino	Mr. W. H. Frettingham.
"	Mr. H. Merryweather.

APPLES.	EXHIBITOR.
Duchess of Oldenburg	Mr. J. Watkins.
" "	Messrs. J. Cheal & Sons.
Ecklinville Seedling	Messrs. G Bunyard & Co.
" "	Mr. W. King.
" "	Messrs. Dicksons & Co.
Egremont Russet	Messrs. G. Bunyard & Co.
" "	Messrs. J. Cheal & Sons.
Fearn's Pippin	Mr. C. Howe.
Frogmore Prolific	Messrs. J. Veitch & Sons.
Gascoigne's Seedling	Royal Horticultural Society.
Gascoigne's Scarlet	Messrs. G. Bunyard & Co.
Golden Noble	Mr. J. Hudson.
" "	Royal Horticultural Society.
" "	Mr. T. Bunyard.
" "	Messrs. C. Lee & Son.
Golden Spire	Mr. A. Waterman.
Gospatric	Mr. C. Ross.
"	Messrs. G. Bunyard & Co.
Gravenstein	Mr. A. Waterman.
" "	Mr. H. G. Oclee.
Grenadier	Mr. J. Watkins.
"	Messrs. Paul & Son.
"	Mr. W. Roupell.
Herefordshire Beefin	Messrs. J. Veitch & Sons.
Hormead Pearmain	Messrs. J. Cheal & Sons.
" "	Messrs. G. Bunyard & Co.
Kerry Pippin	Messrs. J. Jefferies & Son.
King Harry	Messrs. J. Veitch & Sons.
King of Tompkins County	Messrs. T. Rivers & Son.
King of the Pippins	Mr. W. Crump.
Lady Henniker	Messrs. T. Rivers & Son.
" "	Mr. A. McDonald.
" "	Mr. C. G. Sclater.
Lady Sudeley	Messrs. J. Cheal & Sons.
" "	Messrs. G. Bunyard & Co.
Landsberger Reinette	Royal Horticultural Society.
Lane's Prince Albert	Messrs. H. Lane & Son.
" " "	Mr. W. Crump.
Loddington House	Messrs. J. Veitch & Sons.
" "	Mr. M. Dunn.
Lord Derby	Messrs. C. Lee & Son.
" "	Mr. W. Crump.
Lord Grosvenor	Messrs. J. Veitch & Sons.
" "	Mr. J. Watkins.
Lord Suffield	Messrs. G. Bunyard & Co.
" "	Messrs. Dickson & Co.
" "	Mr. W. King.
" "	Mr. W. H. Frettingham.
" "	Messrs. Paul & Son.
" "	Mr. M. Dunn.
Mabbott's Pearmain	Messrs. W. Paul & Son.
Mannington Pearmain	Messrs. T. Rivers & Son.
Melon Apple	Messrs. G. Bunyard & Co.
Mère de Ménage	Mr. J. Rust.
Mother	Mr. A. Waterman.
"	Mr. J. Powell.
Mrs. Barron	Royal Horticultural Society.
" "	Messrs. J. Veitch & Sons.
New Hawthornden	Messrs. J. Peed & Sons.
" "	Messrs. G. Bunyard & Co.
New Northern Greening	" " "
" " "	Messrs. J. R. Pearson & Sons.
Niton House	Messrs. J. Veitch & Sons.
Northern Dumpling	Messrs. J. Cheal & Sons.
Northern Greening (improved)	Mr. W. H. Frettingham.
Okera or Akera	Mr. T. Bunyard.
" "	Messrs. G. Bunyard & Co.
" "	Messrs. J. Cheal & Sons.
Peasgood's Nonesuch	Mr. W. Roupell.
" "	Messrs. R. Veitch & Sons.
" "	Mr. A. Waterman.
" "	Mr. J. Roberts.
" "	Mr. H. G. Oclee.
Potts' Seedling	Messrs. J. Veitch & Sons.
" "	Mr. J. Roberts.
" "	Messrs. J. Jefferies & Son.
" "	Messrs. Dickson & Co.
" "	Messrs. C. Lee & Son.
Reinette de Canada	Messrs. T. Rivers & Son.
Ribston Pippin	Messrs. G. Bunyard & Co.
" "	Messrs. T. Rivers & Son.
" "	Mr. R. Milner.
" "	Mr. W. King.
" "	Mr. C. B. Saunders.
Rosemary Russet	Mr. M. Dunn.
Scarlet Nonpareil	Mr. C. Turner.
Scarlet Pearmain	Messrs. J. Veitch & Sons.
Schoolmaster	Messrs. T. Rivers & Sons.
"	Messrs. J. Veitch & Sons.
Seaton House	" "

APPLES.	EXHIBITOR.
Small's Admirable	Messrs. J. Laing & Sons.
Stirling Castle	Mr. W. King.
" "	Messrs. Dicksons & Co.
" "	Messrs. J. Veitch & Sons.
" "	Messrs. C. Lee & Son.
" "	Messrs. G. Bunyard & Co.
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Autumn Bergamot	Mr. C. Howe.
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Bergamotte Esperen	Mr. W. Crump.
" "	Mr. A. Waterman.
Beurré d'Amanlis	Mr. M. Dunn,
" "	Mr. McDonald.
" "	Messrs. Geo. Bunyard & Co.
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" "	Messrs. Dicksons, Limited.
" "	Royal Horticultural Society.
" "	Messrs. Paul & Son.
" "	Mr. McHattie.
Beurré d'Anjou	Rev. W. Wilks.
Beurré d'Aremberg	Mr. McHattic.
Beurré Bachelier	Mr. Sanders.
" "	Mr. J. Roberts.
" "	Mr. B. Greaves.
" "	Mr. W. Wildsmith.
" "	Mr. W. Crump.
" "	Messrs. J. Veitch & Sons.
" "	Messrs. Geo. Bunyard & Co.
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Beurré Baltet Père	Rev. W. Wilks.
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" "	Mr. M. Dunn.
" "	Mr. McHattie.
" "	Mr. C. Warden.
Beurré Clairgeau	Messrs. G. Bunyard & Co.
Beurré Diel	Mr. H. G. Oelee.
" "	Messrs. W. & E. Wells.
" "	Mr. W. Wildsmith.
" "	Mr. W. G. Pragnell.
" "	Mr. W. Crump.
Beurré Hardy	Mr. W. G. Cummins.
" "	Messrs. G. Bunyard & Co.
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" "	Mr. J. Rust.
" "	Royal Horticultural Society.
Beurré Rance	Mr. R. Smith.
Beurré Sterckmans	Mr. W. G. Pragnell.
" "	Mr. R. Milner.
Beurré Superfin	Royal Horticultural Society.

PEARS.	EXHIBITOR.
Beurré Superfin	Mr. H. G. Oelee.
" "	Messrs. J. Peed & Son.
Catillac	Messrs. J. Cheal & Sons.
"	Messrs. J. Veitch & Sons.
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Doyenné d'Alençon	Rev. W. Wilks.
Doyenné Boussoch	Messrs. Saltmarsh & Son.
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Doyenné du Comice	Mr. Sanders.
" "	Mr. W. Crump.
" "	Messrs. J. Cheal & Sons.
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" "	Mr. W. H. Oelee.
" "	Mr. W. Allan.
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CANKER IN FRUIT TREES.

By Edmund Tonks, Esq., B.C.L., Knowle, Warwickshire.

I have been requested by Mr. Barron to contribute a paper for discussion at this meeting, and as the results of some experiments recently made by me appear to indicate that there may be a remedy for that worst of all diseases affecting fruit trees—canker, which is described in the "Herefordshire Pomona" as "the terror of all orchardists and the bane of most orchards," I thought it right to comply with the request. As my own experience scarcely extends beyond my garden, and numerous duties have prevented me from devoting even there that close and continued observation which is necessary for the proper study of such a subject, I should have hesitated to intrude my crude notions in antagonism to the authorities if their views had been clear and definite; but as these are very vague, both as to the cause and the cure of the disease, I venture to state my own. Thompson, in the "Gardener's Assistant," says—"The cause is imperfectly understood, and so consequently is an effectual cure;" Mr. Fish, in "Cassell's Popular Gardening," says—"In fact it may almost be said to be incurable;" and the "Dictionary of Gardening," the most recent publication on the subject, says—"Were the causes better known, the remedy might generally be much easier found." Yet these, and most of the other writers on the subject, according to my idea, indirectly indicate both the cause and the remedy for the disease, the cause being mal-nutrition, the consequence of an imperfect provision in the soil of the food required by the plant; the remedy, the supply of the food which is deficient. These writers inferentially indicate this remedy. For instance, Thompson recommends that "the soil be ameliorated, by trenching and other means;" Mr. Fish, in "Popular Gardening," says—"Lift the roots into higher places of warmth, and better and more immediately available supplies of food;" and the "Dictionary of Gardening" says—"Trees that are badly cankered may be improved by lifting and replanting in improved or better drained soil."

Perhaps the most convenient method of dealing with the subject in detail is to analyse, paragraph by paragraph, all that is stated relating to canker by some recent and recognised authority; that splendid work, the "Herefordshire Pomona," is possibly the best for the purpose, as it may be assumed to contain a summary of the most recent knowledge of all that relates to orchard growth. The first paragraph of the passage in that work relating to canker states that "it is always due to direct injury." In a controversy a clear and definite issue is most satisfactory, therefore with all submission I venture to assert that it is never due to such cause. That canker may appear in parts which have been injured is no proof that the injury caused the canker, although the injury may determine the particular spot where the disease makes itself visible. A well nourished and consequently healthy tree may be injured to any extent without development of canker, while an ill-nourished tree, or, to avoid begging the question, a tree infected with the disease, will develope in all parts the external signs without the slightest injury or abrasion of any kind, and very frequently on parts where, from their well-protected position, such as the angles of the branches with the main stem, it is almost impossible that injury could take place. The coincidence of canker and an injured part is no more proof of the former having been caused by the injury than that a hole in a building through which the flames of a conflagration are first visible is the cause of the fire.

The second paragraph states that "weakness is at the bottom of the canker." This weakness cannot be want of apparent vigour of growth, for I have frequently observed trees attacked which for a number of years have made the strongest growth, yet the disease has appeared before any external signs of weakness were visible; the very vigour of the growth in some cases appearing to hasten the attack in a soil containing too limited a supply of the necessary food, as that supply is sooner exhausted, and the time arrives when the large tree can no longer find within reach of its roots sufficient for its maintenance. It may be that only one element of food is failing; but every element is indispensable for perfect growth of the whole tree, and that failure would fully account for arrest of growth in parts, weakness, and consequent disease.

The third paragraph is "the tree is old." This may be expressed in other words—the tree has for a long time been growing in the same soil. It is not difficult to realise that in the course of many years a tree may exhaust the most fertile soil. Many seem to overlook the necessity of restoring to the soil what is taken away year after year by large crops of fruit. However rich the soil may have been originally, each crop takes away a definite quantity of the food required by the tree, until in time insufficient remains; then the tree falls, not through age, but through inanition. The same gardeners who leave their fruit trees unfed would think it most unreasonable to expect them to grow their crops of vegetables without manure.

The fourth paragraph is, "or the variety is very old or very delicate." This raises the much-vexed question whether a seminal plant has a finite life, or one which can be prolonged indefinitely by propagation. Experience seems to prove that individual life has a limit, though there is evidence that many seminal plants have a very prolonged existence; however, the limits of this paper do not allow the present discussion of the question. It may be sufficient to say that observation does not lead me to believe that the age or delicacy of a variety renders it more liable to canker when the soil contains what it requires.

The fifth paragraph suggests "that the soil is not sufficiently drained." Canker, according to my observation, occurs equally on well-drained as on ill-drained soils; it is not a question of condition of roots. My own garden formerly contained several trees rapidly succumbing to canker, which, when grafted with other varieties, at once put on healthy growth, made fine heads, and have since for many years been perfectly free from the disease. Each variety requires its own appropriate food; Strawberries afford a very good illustration of this. I have among my friends the reputation of growing this fruit to perfection, yet I had the greatest difficulty in finding varieties which would do fairly in my soil, and after trial of many more than a hundred, have so far discovered only about half a dozen which are moderately successful. British Queen refused to fruit; Dr. Hogg bore fairly as an annual, but did not survive to the second season; in fact, all the Queen race and many other kinds only do more or less ill. Such being the case, it is not unreasonable to believe that some varieties of fruit trees find in some soils what they require, while others do not, and in consequence become subject to canker.

The sixth paragraph is, "or it (the soil) may be too poor." I quite agree with this, as I believe a deficiency in the soil of the necessary food of the tree is the cause of canker.

Seventhly, "The wood may be weak, and is not well ripened, when a sudden frost, especially after rain, ruptures the vessels, and this forms the chief cause of canker." Unripe wood, which is, however, often the result of imperfect nutrition, is productive of much mischief of a temporary nature; but as canker attacks well matured wood, I cannot believe it to be in any case its cause, although when the real cause is at work it may appear on such wood.

In the eighth paragraph the author repeats himself. "Any direct injury, however, to the bark of a tree as from friction of one branch upon another, the pressure of a clothes' line tied from tree to tree, or injury from a ladder in fruit-gathering, may all cause it even in healthy trees." This calls for no further reply than that given to the first paragraph.

Finally, the author states that "Canker commences with an enlargement of the vessels of the bark, more apparent, by the way, in Apple than in Pear trees, and continues to increase until in the course of a year or two the alburnum dies, the bark cracks, rises in large scales, and falls off, leaving the trunk dead, and ready to break off with the first wind if not before removed. The canker shows itself quickly, and if the cause be sought for it will often admit of a remedy. The most usually effective is a good supply of nourishment to the trees affected, together with the removal of the parts injured." I confess that the preliminary symptoms described as the enlargement of the vessels of the bark have escaped my observation; but there appears to be some contradiction in the statement, as while the first symptoms of the disease are described as extending over a year or two, further on it is stated that canker shows itself quickly. However, although I differ so much from the writer of the article in the "Pomona" as to the

causes of canker, we are agreed on the remedy—namely, "a good supply of nourishment to the trees."

In 1886 my attention was especially directed to plant food, having been requested to write a paper on that subject for the Birmingham Gardeners' Association. In the same year, having noticed that a number of Apple trees in my collection had become unsightly through canker, I marked about a dozen of them for destruction; but while studying the subject of plant food, which involved the consideration of the analysis of various plants, I was very much struck with those of the fruit and wood of the Apple in Wolff's "Aschen Analysen," the great authority on plant analysis. I found that the fruit contained an exceptionally large proportion of soda and the wood of lime. This at once suggested the idea that my soil might not contain sufficient of one or both of these elements to supply the wants of the Apple tree; therefore I resolved, instead of destroying the marked trees, to give them and all my Apple trees a good dressing of a complete artificial manure which contained full proportions of soda and lime. In the following season, 1887, which was exceptionally hot and dry, either through the drought, the manure, or some other cause, not a spot of active canker could be found; all the edges of the old wounds on the marked and other trees, almost as badly affected, had put out granulations and healed over, and the trees, many of which had previously ceased to extend, made healthy and vigorous growth. Last winter the trees were again dressed with the same manure; this season they have been exposed to the most unfavourable conditions; the soil to a great depth was almost dust dry when they were making their first growth, while an army of caterpillars ruined what foliage was made. Then followed the most continuous cold weather and rain experienced for many years. Notwithstanding conditions so conducive to the extension of disease, there is at the present time still no appearance of active canker. The trees have been carefully inspected by some experienced pomologists who, doubtless, will confirm my statement. Short as is the time during which the trees have been submitted to the treatment, I can only conclude that the arrest of the disease is due to the supply of elements of food required by the trees, of which a sufficient quantity was not previously contained in the soil.

The food required by a plant is a complicated mixture of many elements, all of which are necessary for its well-being. The complete absence of one of them would be fatal; a deficient supply of one would arrest its development, and render it subject to disease. Nothing is more instructive and conclusive on this point than the copies of photographs of plants grown for the purpose of testing the effect of manures more or less complete to be found in treatises on the subject. That of "Ville on Artificial Manures," published by Longmans, contains many such illustrations, which clearly show that when the soil contains every element of fertility but one it remains absolutely barren. For instance, in a soil without potash the Vine makes no growth.

It remains to say that the manures necessary to restore a tree to health vary as the soils, although the ashes of the wood of the Apple tree contains 71 per cent. of lime—an exceptionally large quantity—it would not be necessary to supply this element on a lime formation; nor would soda be required in a soil near the sea, although on other geological formations or situations a deficiency of one or both may be the cause of canker. Like conditions apply to the other elements.

Various soils require such manures as will supply their various deficiencies; but as it is most difficult to ascertain even by analysis what may be the deficiencies of a soil, the practical way of dealing with the subject is to study the analysis of the ashes of the plant in question, and to use a manure which is composed of these elements; for instance:—

The ashes of the wood of the Apple tree contain—

Potash.	Soda.	Magnesia.	Lime.	Iron.	Phosphorus.	Sulphur.	Silica.	Chlorine.
12·0	1·6	5·7	71·0	—	4·6	2·9	1·8	0·2

and those of the fruit—

35·7	26·1	8·8	4·1	1·40	13·6	6·1	4·3	—

Ville lays down the rule that soils generally contain sufficient of all the mineral elements except potash, lime, and phosphorus, and the gaseous element nitrogen, and says it is only necessary to supply to the soil manures which contain these four. This may be sufficient for the general purposes of cultivation, but more recent experiments have conclusively proved that the addition of a small quantity of iron largely increases the development of foliage, and consequently of the plant. In dealing with a mysterious disease such as canker I should not leave out either iron or magnesia.

The following formula, which may be varied as circumstances require, is suitable for the Apple tree:—

Superphosphate of lime	12 parts.
Nitrate of potash	10 ,,
Chloride of soda	4 ,,
Sulphate of magnesia	2 ,,
Sulphate of iron	1 ,,
Sulphate of lime	8 ,,

This may be used at the rate of quarter of a pound to the square yard over the whole extent of soil within reach of the roots. It need not be dug in; one effect of the manure may be relied on—if it does not cure canker it will, at any rate, most certainly benefit the trees.

I hope you will excuse me for having questioned some of the conclusions of great horticultural authorities, but it seems that some of these conclusions have been accepted without sufficient examination, as being time-honoured traditions handed down through many generations. Gardeners are, in this respect, perhaps a little too conservative.

I think much may be learnt by occasionally departing from these traditions and making independent experiments in cultivation. My own experience proves that many such experiments resulted in failures, but there is full compensation if only one useful discovery be made or one error exploded.

RENOVATION OF OLD AND FORMATION OF NEW ORCHARDS IN THE WEST MIDLANDS.

By Mr. W. Coleman, Eastnor Castle Gardens.

Five years having passed since the R.H.S. inaugurated the first comprehensive Apple Conference, the present Council has wisely decided upon testing the result of that important step by again calling together the friends of Pomona. A small minority at the time thought the exhibition of thousands of plates of Apples would not benefit the growers, but overlooked the fact that these exhibits would bring together not only the growers, but the consumers also. Since that time the growers' prospects have not improved, owing, they say, to the prevalence of low prices brought about by gluts and foreign competition. Buyers, on the other hand, say the supply is unevenly and irregularly distributed, and the price is too high when they purchase from the retailer. Growers say fruit culture will not pay until the land each man holds or occupies is as good as his own, or let to him on a very long lease indeed; but present owners of the soil somehow do not seem to see the force of their argument, consequently the most important work the present gathering has before it is the framing of a scheme of open markets in which consumers can buy first hand at a fair remunerative prices. This is all very well, but supposing each householder is in a position to buy Apples, say from day to day, where are those Apples to come from? Why, we must import them. Actually, we must trust to the Colonies for the produce of a tree which is indigenous to our soil, whilst thousands of acres of land capable of producing the finest fruit is going out of cultivation. To the R.H.S. should attach the honour of taking the initiative in working out this problem, but before the body can move we must learn from reliable men the progress which has been made in the great fruit-growing districts. Living as I do in the county of Hereford, boasting its 27,000 acres of orcharding, where in days gone by thousands of tons of good fruit was lost, wasted, or converted into indifferent cider, I am able to form a pretty correct opinion of our own progress, and although less rapid than I could wish I may say it is fairly satisfactory. Cider drinking amongst the working classes since I first knew the county has gradually decreased, consequently small parcels of the rosy Tom Putt and other useful Apples alike good for cooking or vintage are stored for daily use by all the members of the grower's family. If not wanted, why then they are sold to dealers, who make a profit for conveyance to retailers, who also make another profit, and that a heavy one, from their customers. Although a slight step forward this state of the case is not quite satisfactory, neither will it be until a powerful fruit growers' association, which should be the outcome of this Conference, has established a network of markets in all provincial towns as well as in London, markets in which producers, as in all parts of Paris, can meet face to face with consumers without the aid of so many middlemen. In fruit-growing counties like Hereford, Worcester, Gloucester, Kent, Devon, and Somerset these local markets should be well supported, as we gather from statistics that three-quarters of a million of money is sent out of England annually for Apples alone. If landowners, hitherto blind to their own interests, and legislators now take up the matter, I see no reason why growers should not go forth to the production of an article which the public must and will have, and so keep the money at home. Our climate is all that can be desired for the growth of fresh crisp fruit,

not quite so highly coloured or so large as picked samples from the Colonies, hut large enough to command top prices when well grown and packed and properly marketed. There must he no shaking from the trees, hut the cream of the crop must be hand-picked and honestly packed as firsts and seconds. The residue or refuse, which added to the lest, would increase expenses and pull down prices, would then remain at home for various purposes.

Mr. Knight, the great physiologist and hybridist, who worked so much in Hereford and Salop, proved by analysis that some soils, even in these favoured counties, were preferable to others for producing Apples of dense gravity and full of saccharine matter. The late Dr. Bull, of whom Hereford should be proud, following in his wake, corroborated all that Knight had said, proving, I think satisfactorily, what past generations of shrewd men had found out for themselves, both as regards the quality of the fruit and the constituents of the soil which should be chosen for Apples, also for Pears. The conclusions at which they arrived were these : The light thin soils will not grow the best Apples, therefore those who would plant a successful orchard must choose a deep stiff sandstone loam if they have the opportunity of doing so. All the orchard land in this county is not alike good ; indeed, some is very bad, but the soil here, as in Devonshire, which produces the best fruit owes its fertility to the plentiful supply of lime from the marl or cornstone ; to its great depth and sustaining nature. Scientists who will may peruse the first part of the " Herefordshire Pomona," or they may follow Mr. Rivers through his exhaustive address delivered at the Crystal Palace, but my remarks, necessarily brief, will guide plain practical planters to the best spots for new plantations.

Having been honoured by an invitation to contribute a short paper upon the Apple, I have determined to confine myself to the west midland orchards, in which, I am pleased to repeat, some progress has been made since the first Conference was held in 1883. Draining, grubbing, grafting, and planting are still going on, but much remains to be done before we can invite inspection. Although the Apple is a long-lived tree and perfectly hardy in all its parts save its flowers the occupants of many of our oldest orchards, crippled by age, bad usage, and neglect are past recovery, and should be cleared away, but the ground they occupy should not be replanted if better or equally good sites can be found for new plantations. Other orchards, again, containing thoroughly sound young trees, although of inferior sorts, after the grubber's axe has passed over the land, may be converted by grafting and resuscitated by draining and top-dressing. Some of our oldest orchards which date back to the Wars of the Roses contain a great number of wildings or kernel fruits of no value to the owners even, whilst younger plantations are crowded with healthy vigorous trees, at one time supposed be Norman, but now proved to be English seedlings, no better than the stocks used in large nurseries. Upon the first I would not spend money, as they are too old for grafting, too old to pay rent, too old for anything save loss and disappointment. The second I would behead and regraft with choice varieties which have been proved in the locality. Confining myself to old orchards now existing or languishing in the western counties, I may close my remarks upon this head by saying, Cut down all useless trees, thin out the heads of those worth keeping, cleanse the branches and stems from moss and insects, regraft sound healthy trees into good market sorts, and see that the drainage is satisfactory. I will not presume to inform practical men who may deign to read my remarks that sound, deep, naturally drained orchards are better than others which require artificial treatment, and that a certain quantity of moisture in the soil is absolutely necessary, hut on no account must it be stagnant. All gardeners are well acquainted with the fact that soils too dry produce fruit that is small and mealy, whilst water-logged soils are several degrees colder than others of similar texture that are free from this root-chilling poison. They know, moreover, that warm summer rains run off the surface, whilst the sun acts very slowly in raising the temperature of the wet subsoil in which deeply seated roots soon perish, and those nearest the surface are little better off, as they do not commence fresh action much before midsummer. Drainage, all good cultivators assert, is the first essential in the preparation of new orchards or in the renovation of old ones, and why? well, simply because the removal of stagnant, if not putrid, water and the introduction of fresh air raises the temperature of the soil from 3° to 5°, a condition which not infrequently forms the dividing line betwixt success and failure.

So far my remarks have been confined to old orchards, planted haphazard upon all sorts and conditions of badly prepared land, as well as in unfavourable situations. The best of these may be retained for a time, upon the principle that half a loaf is better than no bread; but the majority of them must go, and young ones must spring up before we can hope to realise an average £10 an acre, or compete with the colonists in our own markets. Some years, as many present know, have passed since horticulturists commenced agitating, but the good seed which was intended to put three-quarters of a million of money into the British farmers' pocket for a long time fell upon stony ground. Some recently has taken root, and far-seeing landowners are now putting our theory into practice by offering land upon conditions that will induce capitalists to invest in fruit culture precisely as they do in coal and iron. In this and the adjoining counties good landlords are raising and distributing to their tenantry Apple and Pear trees by thousands. These mostly are standards on free stocks, the only class of tree suited to pasture and arable land. Nurserymen, again, who have brought propagation up to a fine art, are producing standards and dwarfs by the million, and these surely in a few years should make their mark. Meantime, a complete network of markets, I insist, must be created throughout the kingdom.

From the preceding remarks those who run may gather the fact that I do not set much value on the thousands of acres of ragged, decrepit, moss and lichen-laden trees, hut until the new plantations come into bearing we must make the best of them. Then, with Gladstonian vigour, we may hew them down, and let the Apple-sick sites go back to Hops, corn, and pasture. Upon this principle change of site may be worked precisely as gardeners now manage their Strawberry plantations, and with similar results. As I venture to say, one acre of modern orcharding will beat ten of the old—at least, in the West Midland counties.

Already I am afraid my paper is too long, but having warmed to my subject, I should now like to say a few words upon the formation of these modern orchards. I might divide them into several parts, such as aspect, site, soil, preparation, planting, the best style of tree manuring, mulching, pruning and protection, gathering, storing, packing, and marketing, but my time being limited, my words must be brief and general.

Aspect and site being so closely dovetailed together these I will not attempt to separate. All gardeners, I believe, are pretty well agreed that a south aspect is best, as trees in this position ripen their wood well, and produce fruit of the highest colour and quality. The Apple, however, being perfectly hardy, the quality of the soil must not be lost sight of ; neither must altitude and shelter from north and east winds be repudiated. Under these circumstances, the soil being deep sandstone loam resting on marl, and naturally drained, I should not object to a point east, or any other aspect round with the sun to full west. The latter, however, I should prefer, and for these reasons ; although western gales in this part of the country do some damage, it is well known that if plants are exposed to the first rays of the morning sun when they are frozen they will suffer, but if they are shaded until they are gradually thawed by the rising temperature of the air they will stand a few degrees with impunity. An orchard open to the east or south-east is almost sure to suffer an attack of spring frost when in full flower or setting, whereas one with a western aspect, which does not receive the sun until the temperature has risen and dispelled the frost often sets and carries full crops to maturity. Hardly a year passes in which the gardener does not find early crops of all kinds are safer and finer upon west borders than upon others. Therefore I think few will deny that his experience is of great value to the planter. The site, I may say, should be above the line of fog, and it should not be too near or on a level with water. If naturally drained much time and expense will be saved, otherwise this operation must he well carried out as a preliminary to preparation. This may be performed in two ways—viz., hy trenching two spits deep for pyramids or bushes, or by taking out large circular stations on grass or arable land for standards. If trenching is decided upon, the bottom spit, if heavy and inferior, should not be brought to the surface, hut it may he ameliorated by the addition of burnt clay from the drains, by road-scrapings, or any other fresh friable material short of rich animal manure. This, unless the staple be very poor, I would keep back for use as a mulch after the trees are planted. On all ordinary loams young trees grow fast enough at first, but the time comes when they must be fed, otherwise they cannot be expected to yield year after year fruit of the finest quality.

In the preparation of stations for standards on grass or tillage ground, I would throw off the top spit 9 feet in diameter, break up the bottom, and throw out clay or bad material to be carted away or burned. If cold and at all unfavourable to root growth, exposure of the soil for a few weeks or months would greatly improve its quality. Otherwise, after correcting the bottom spit, that thrown off first, turf included, with anything in the way of road scrapings or old lime rubble added, may be chopped in until the hole is quite full or a little above the ground level

A stout stake should then be driven down to the solid bottom as a support for the tree when planted.

Planting may be performed at any time from the beginning of October up to the end of April. Autumn, however, is best, as the roots at once take to the soil and the trees make a fair growth the following summer. October and November undoubtedly are the best months—that is, provided the land is in perfect condition and the weather favourable; but so important is getting the trees into the ground when it is fairly warm and dry, that I would rather defer planting until April than risk placing the roots in a pasty medium. Trees of home growth—that is, from one's own nursery, which every fruit grower should have, may be planted much earlier than others brought in direct from a distance. All trees should be carefully divested of faulty or injured roots by a clean cut with a sharp knife; they should never be allowed to become dry, and each root and fibre should be spread out in a horizontal position, lightly covered, and watered home.

In the arrangement of trees, the rows, if convenient, should run from north to south or north-east to south-west, as three out of the four sides then receive an equal share of sun and light. The old fault of planting them too close should be carefully guarded against, as good fruit cannot be expected when the heads grow into each other and the roots are constantly shaded. Standards of upright-growing varieties may be placed 30 feet apart each way, whilst 40 feet will not be found too much for spreading trees like Flanders Pippin and Blenheim Pippin. Trees, again, of one variety, or a similar habit of growth, and which ripen their fruit at the same time, should be kept together or in rows, alternating with others of a spreading or upright character. By observing this rule at the outset the general and orderly appearance of the nursery will be greatly improved, and much time and labour will be saved when gathering the fruit. The same rule applies also to pyramids and bushes which, by the way, should have plenty of room for extension in every direction, as no extensive planter can afford to prune close upon villa garden principles, especially when the best of the fruit is cut away by the process. Thinning the shoots and branches annually of course is necessary, but beyond this and maintaining the balance by tipping a gross shoot, I should let each tree go. The distance apart will depend upon the kind of stock, as trees on the French Paradise may be grown for years at distances of 4 to 6 feet apart each way. On the English Paradise or Doucin, which I like best, they grow stronger; consequently more room is required. Twelve feet from row to row, and 6 feet from tree to tree, will give them room for a long time, but eventually it may be necessary to transplant every alternate tree, when those left will stand equidistant, viz.—12 feet from stem to stem. Some I know plant much closer, but when it is borne in mind that a well developed head turns off not only more but better fruit than a small one, abundance of room is a decided advantage. Moreover, plenty of space favours a spreading growth, which keeps the heads near the ground, safe from wind and easy of access for pruning, manipulating, and gathering. When standards are planted they should be well secured to the stakes previously driven, but in a way that will allow them to settle with the subsiding soil, otherwise the roots will drag and strangle. If on pasture land, they should be protected from sheep and cattle, and the orchard itself must be fenced and wired round to keep out hares and rabbits.

VARIETIES.—The only point I must now venture to touch upon is the selection of varieties for special soils, situations, and purposes. A few years ago we planted very early sorts for coming in before the American importations, but this is now over, as the quick run, and summers hotter than our own combined, enable our friends to be abreast of us at the beginning, as for a long time they have been at the end of the season. Our only way out of this dilemma, as I have before observed, is high cultivation. We have a climate which ripens fruit crisp, tender, and juicy, not quite so highly coloured, perhaps, but in my opinion superior to the general run of American. We have the soil which, thanks to yearly tenancies, nobody cares to till, and we have the ability. All we want is quality, then it matters little whether we market early or late, always provided we confine ourselves to a few of the best sorts which do well in the locality. This hackneyed phrase for a long time puzzled would-be growers, who said, Where must we look for anything better than a Suffield or a Blenheim? Well, I am not sure that anyone requires anything better, but if they do they must just look into any of the great well known nurseries about the end of September, and there they will find thousands of trees of all the leading kinds carrying fruit of the highest quality. Some of these on dwarfing stocks—just the thing for the garden or home nursery—will be loaded with large, bright fruit, of which at the present time we ought to have 100,000 tons ready for storing. They will also find standards on free stocks specially prepared for planting on pasture and arable land. From these they may select scores or hundreds of trees of one sort, and so on of another, but on no account must they select one or two trees each of a hundred sorts, as this plurality is a great drawback in commercial culture. Very early sorts generally go direct from the trees to the market; medium and late sorts must be stored in dark, cool fruit rooms or dry cellars, and this accommodation, or the want of it, must be the guide in making a selection.

Gathering, storing, and marketing hitherto in the western counties has not received proper attention; but a great improvement is now taking place, and the day I hope is not far distant when ruthless shaking the boughs will be looked upon as a barbarous custom of the past. Apples worth growing are worth hand-picking, and when hand-picked they are worth sizing—that is, dividing into two classes before they are stored or sent to market. The best only should be sent away; seconds may be retained for home use or consumption in the neighbourhood. There should be no mixing of sorts, or good and bad together, but one uniform quality should prevail. Buyers in this part of the country still stick to their pots. I do not mean earthenware, but wicker, which hold from five to seven pecks each; but invariably they sell by weight, and this, I think, is the fairest way, as anyone can compute the value of a ton of Apples. Before Apples are hand-picked for storing they should be ripe, that is to say, the kernels should be brown and somewhat loose in their cells. The fruit, moreover, should be perfectly dry and free from spot or blemish, as one black sheep soon demoralises the flock. Once put away, the less they are turned or handled the better, especially when sweating or during frosty weather.

If the store room is fitted with lath shelves, the choice varieties should be placed one, or at most two, layers thick, but late sorts grown in great quantities may be laid upon dry floors in greater bulk. They may also be stored in dry flour barrels, which should be labelled and put away in a low even temperature for the winter. Good aristocratic store rooms are rather expensive, but a cutting driven into a dry bank and covered with thatch, with double doors at one end, will make a store equal to the best and most elaborate in the kingdom. Resinous wood should never be used in the manufacture of shelves. Neither should hay or straw be admitted within the walls, as all these materials impart a disagreeable flavour. Dry fern, on the other hand, may be used for covering purposes, but very little of this will suffice where frost, and more especially heat-proof, stores are properly constructed.

FRUIT PRODUCTION AND DISTRIBUTION FROM A PROVINCIAL POINT OF VIEW.

By Mr. E. J. Baillie, F.L.S.

I FEEL some explanation is needful for the introduction of a paper which does not profess to be technical before such an audience and upon such an occasion, but I have long held the belief that, whilst we pay strict attention to the practical points, or strictly technical details which rightly claim the closer attention of the specialist, we ought to give some prominence to particulars which, we may say, constitute the fringe of a subject.

Whilst these are, perhaps, of a too general character to possess much charm for the person intent upon some particular detail, they serve to put us in touch with the public, and thus are helpful in removing popular prejudices, for there is a sense of separation somehow between those to whom we look for fruit consumption and those to whom we look for fruit production.

I knew, too, that there would be gentlemen of wide practical experience whose names are in the front rank of the honourable record of present day horticulture, taking active part in these proceedings, and I thought that they would treat of particular phases of the subjects irresistibly suggested by a "National Fruit Conference."

In this I was perfectly right. Whether I was right in my choice of a subject, for the reasons already stated, remain to be seen, but I venture to think from what I know of the good nature of those connected with garden pursuits, I can claim your indulgence if I fail to gain your approval; and if any remarks of mine are such as to provoke hostility of thought, you must please put them down to provincial prejudice, or, may I say, to that simplicity which is one of the most prominent attributes of raw rusticity.

I appreciate the difficulty of saying anything new on the question, but I shield myself behind the fact that the reiteration of a truth is not a needless undertaking until precept is put into practice. So long as

we pay our millions of money into other hands for produce which could come from ourselves we are quite safe in assuming that there is yet reason for action.

Coming up from pastoral pursuits to this great centre of crowding, clamouring life, how can one express the feelings that somehow naturally force themselves to the front? They may be said to be somewhat thus: Here you have in your great crowded centre somewhere approaching 5,000,000 of souls. This area, with its vast population, has practically grown nothing but bricks and mortar save the trees and flowers in its beautiful pleasure parks and its promenades; and if this great centre were dependent upon its own resources for market produce for its daily needs it would very quickly have to answer its children's cry for bread by giving them stones.

This great multitude must take some feeding. The open country of the shires gives garden ground enough for all. The earnings of the provinces find their way largely into the pockets of the landowners, and they, in the natural order of present day methods, spend a large portion of their time and the greater part of their wealth in London. There is a kind of feeling that, seeing so much of the wealth of the country comes here, more might be done for us and less for the foreign coquettes who court your favour and gain your sympathy and support for such things as we can grow quite satisfactorily at home.

I do not at all fear the bogey of foreign competition. This is, I remind myself, a National Conference, but the subject is really universal. The idea involved in fruit production and distribution is too large for a nation. We cannot, for instance, grow the Orange. We should not like to dispense with it, therefore we invite the foreigner to send it to us; but we can produce Pippins; then why should you raise your eyes above the beautiful fertile plains, say, of Kent and Sussex, and with the telescope of a false economy find beyond the seas, in the broad acres of America, Canada, Australia, and elsewhere, the admitted beauty of fruitful plains, but also an added imaginary beauty, really nothing beyond what you could have seen without the glasses within the confining hedgerows of our British orchards?

We must, however, get somewhat nearer the chief points to be considered. We must drop figure and get to facts. We think we may safely start with an aphorism. Cultivation of the land is the basis of all economy. Mother Earth, after all, nurtures the whole family of the human race. "The profit of the earth is for all; the king himself is served by the field." The political economist and the social scientist can touch no profounder problem than the problem of production, and we cannot escape the consideration of the threefold aspect of the laws of life which all rightly civilised people recognise:—

1, The population must be properly employed.

2, The people must be clothed and fed.

3, As a necessary condition the land must be cultivated and cropped.

Now we have already reminded ourselves that we have to take ourselves outside the limit line of streets and alleys and get into the open country, where we find agriculture and horticulture side by side, sometimes overlapping each other, but always mainly concerned with these four phases of occupation:—

1, Cattle production, under which I would include the rearing and breeding of all animals for slaughter or other purposes.

2, Wheat production, under which head I would include all arable farming.

3, Dairy farming, under which I would include all milk, cheese, and dairy products.

4, Fruit farming, including the production of vegetables and other market produce of this character.

The consideration of the question of supply immediately brings before us the question of demand. We ask ourselves, What is demand? Why is it needful to produce? An elementary question truly, but one which has been handled peculiarly by the jugglers of political and other economists. Briefly, produce is needed for the maintenance of political life. It was easy for the French wit to say, "Give me the luxuries of life, let who will take its necessities;" but necessities are—necessities! We then ask ourselves upon what can good health and happy life be best maintained.

Well, I fear we should here quickly get into conflict of opinion. Doctors differ. I am justified, however, upon the grounds of science and of experience in asserting that men can live, and live healthfully and happily, on cereals and fruit, so that a Wheat farm and a fruit farm would meet all national needs. Cattle farming we are not now concerned about.

I know I strike a chord which may not be one entirely of harmony in a meeting of this character, when I say that man can derive all needful sustenance from the cereals and fruit, that is to say, humanity has in fruits—for cereals are fruits—all that it needs. Mark, please, I do not say it has therein all that it craves, but all that it needs.

Now, if in any other machine than that of man (if you permit him to be so considered for a moment), heat, essential for its going, could be got from deal logs, and it was fed by the engineer with mahogany French polished, and refined oils, we consider it strange. Of course he might do it if he liked, but should we wonder why? Man, so far as his means permit, may, too, feed on what he likes, but the economist must first consider essentials, not preferences or prejudices. But I find I must push forward, for I dare not pursue fancy too far in a paper of twenty minutes length.

After the determination of what is essential for the maintenance of life we must consider the labour question. Which of the four systems under which we have divided the question of cultivation employs the largest amount of labour, and in which are our labourers the most happily and healthily engaged? Unhesitatingly, with firmest decision, we answer, In fruit production. Quite lately I, by chance, became the travelling companion of one of the largest agriculturists in our county, whose farm lands had been laid down to grass. He had given up corn for cattle, and he told me that as a result fifteen cottages were at that moment standing empty. So far as farm labourers were concerned he had no further use for them, and they had gone—where? He did not know, but in all probability to swell the already congested population of the towns. How are we to get our open-faced, honest-hearted country population back to the green lanes and the gardens?

One of the best methods is the development of the industry of fruit production. But is our climate such as to encourage safely the cultivation of hardy fruits? Let us not commit the often rash errors of a too eager enthusiasm. I do not know which most to pity or blame—the blind optimist who to every question suggesting the possibility of big profits, Arcadian delights, and a contented population always basking in the sunshine of ease and unconcern, replies, "I answer enthusiastically—Yes;" or the poor pessimist who says our Apples are only Crabs; that there is a worm at every core; that the glory has departed, and we are all tumbling into the Slough of Despond.

But there is a *via media*. It is possible to make the crooked straight, and the rough places plain, if we only set ourselves heartily to find the more excellent way.

Hardy fruits can be grown, and well grown, in this much-despised climate of ours; but, like everything else, it must be done properly. No more subtle sweetness, crispness, and altogether right flavour can lurk beneath the skin of Apple or Pear than can be found in the flesh of a British-grown Cox's Orange or Ribston Pippin, or some of our best Pears, and no sprightly sauciness of brisk acidity can be found in the often insipid flavour of many of the foreign sub-acid Apples to compare with that of a northern grown Keswick or Lord Suffield.

There are those about us, and apparently warmly interested in this movement, who go to extremes in both directions. In this problem of production let us remember we have all tastes to suit, all palates to please, and therefore a wide range for our catering. One cannot help being amused to read that somebody's Pippin, which is the Apple of the future for the essence of its sweetness and syrupy juiciness, to which sugar would be a superfluity if not an absolute detraction; and in another week's issue of the same journal the merit of somebody else's seedling, which is to be the Apple of the future, is found in and founded on the fact that its beautiful tartness of flavour is such as absolutely to defy the seductive influence of sugar or syrup, bringing it to the dull level of the popular palate which can only take its Strawberries when reduced to a kind of saccharine paste, which can only take Currants as preserves, or Cherries in brandy.

So long as opinions differ so widely we need not fear the unavoidable influence of climate in any of the home districts upon the qualities of our British-grown fruit.

Whilst admitting of a certain amount of healthy variation in the quality of the fruits I would venture to say that the error of the past has been rather in the multiplication of kinds than in the other direction. Some people have prided themselves upon having as many varieties as they can count trees in their orchards, but I could never see the full force of the benefit of such possession. It is well to choose but few kinds, letting them be such as are suitable to the district and such as commend themselves as market favourites.

For instance, in the larger Lancashire towns Apples of a brisk sharp flavour find much readier sale than the sweeter fruits for which there may probably be greater demand in the south. If you can sell at

Cottonopolis Keswicks or Lord Suffields by the ton why not grow them by the acre rather than coddle with somebody's new seedling said to surpass the Newtown Pippin in its sugary flavour when the season is favourable enough for it to fruit? Meet the demand of the district and proceed cautiously; extend as rapidly as you like, but carefully.

If it is worth doing at all it is worth doing well. Do away with worthless incumbrances of the ground. A good fruit is as readily grown as a bad one. This is the crux in the provinces.

If time permitted me to draw you a picture of the typical farmer's orchard you would not wonder that fruit-growing was a feeble industry in many places. Such so-called orchards are, many of them, excellent hunting grounds for the entomologist or the cryptogamic botanist, whose special attraction is amongst mosses and lichens. Most of the trees are favourable specimens of artistic antiquity. The only evidence of anything approaching a pruning process which I have ever witnessed amongst some of them was the wreckage of the storm or the broken boughs at Appletide which had snapped asunder under the weight of the ladder against them.

If the orchards are carelessly kept—or carefully unkept—it is an equally peculiar fact that when fruit is borne by the trees it seems to suggest no necessity for right handling. Mark Twain in one of his sketches enlarges, I think, upon his experience in days when he was assumed to have the editorial charge of an agricultural paper, and in answer to a correspondent, he told him he thought he bad himself to blame for the condition of his Turnip crop, the defects of which he had just described. "You should wait," said Mark, "until they are nearly ripe, then get up the tree and shake them down." He found that was not the way Turnips were treated, but the editor had probably seen a country farmer gathering his fruit, for that is precisely the method he follows on such an occasion. All this and much more must be changed before British fruit-growing takes the important place to which it is entitled.

The present position of the fruit question in the public mind seems to be that fruit is now used to grace the tables of the wealthy or to add a kind of fashionable finish to the dinner of the fairly well-to-do; but it is seldom regarded as food pure and simple, though such it really ought to be.

Let anyone having an interest in philanthropic work cause District Visitors or City Missionaries to make inquiries amongst the poor of the large cities, and you will find that fruit is almost, if not entirely, absent from the list of dietary articles from which the food supply of those who live in the narrow streets and the crowded alleys is derived. I have gathered statistics in our own district, and was startled to find how the poor live even in a provincial town, where a person placed at its centre might get between the hedgerows and into the fields well within half an hour. Ignorance and prejudice have helped to maintain this condition of things, for they have only the bare idea that fruit is palatable, and have no idea that it is also invigorating and healthful.

For the proper and complete developments of the fruit movement in this country we must have all our forces to the front. There is a really steady demand, we are told, for the best fruits carefully gathered and well packed, at most remunerative prices. That seems to meet the want in certain directions, but we must encourage those educational and moral movements which have for their aim and object the inculcation of habits of thrift and health amongst the masses of the people.

There should be, and must be, a very largely increased demand for the home product, and the home product will be then forthcoming; and this brings us closer to some of the features we have to face in the question of distribution.

This opens up as many avenues of thought as the question of production—perhaps more, for in the question of production we deal largely with matters of conjecture, for we can never know the end of an unfollowed course, and if you advocate two methods or fifty you would find followers for each; but the question of distribution brings us at once face to face with the problems of £ s. d., and with the conditions of market operations and regulations.

I do not intend to take up the time of this meeting by attempting to deal with one of the most damaging conditions which we meet with as a most serious obstruction in the very outset, that, namely, of the railway rates. Nor do I attempt to touch upon that other forcible deterrent—the question of land tenure; but this and the railway question will, I find, be dealt with in separate papers; but until some sweeping change is made in the present system of railway charges it seems that the British fruit-grower will find his industry shackled and weighted to such an extent as to prevent his making a profit at all commensurate with that which he is helping to put into the pockets of the railway shareholders.

Next to the railway question we require the establishment of some responsible agency or agencies to take up in combination the conditions which cannot be successfully fought single-handed, and this agency should not be merely commercially protective, but also educational. Amongst other matters it should collect and publish careful data as to districts, climatic influences, meteorological notes, and such other intelligence as would serve to guide. This body would have to be influential and potent, for the power of monopoly is, as matters now stand, almost invariably against the producer and the consumer, and in favour of some intermediate agent, whose name is legion apparently, and whose presence may be necessary for the discharge of commercial enterprise, but who ought to be regarded more in the capacity of a carrier or an agent rather than a trader or merchant.

Next we require the provision of centres of sale. Endless time is lost by the producer in his effort to find a market, and neglect at home is consequently unavoidable. It is essential that persons having produce to sell should be brought into contact with persons requiring to purchase, but we have at present no such facility. Cheshire has its cheese fairs, established by the order of a council, and the staple product of the county therefore holds its own in spite of foreign competition. Birmingham has its Onion fair, but I do not know of a town in England thas has its fruit fair.

Then we ought to be able to purchase fruits by name as to variety. To the farmer mind not so many years ago everything green upon the face of the field was grass. To the mind of the average citizen or citizen's wife anything that is round, and that has been plucked from a tree in an orchard, is an Apple; it matters not whether it be a flavourless Crab or a Golden Pippin—it is an Apple; but we want to initiate the public into a knowledge that certain Apples carry with them certain qualities and certain flavours, and we want then to show that precisely what they want can be supplied. There are advertisements in connection with domestic commodities, which seem to suggest the grave importance of your being sure you get somebody's starch when you ask for it. The same caution should be applied in the pomological department, and when the cook finds out that a certain kind of Apple can be depended upon for a certain quality we should find the beginning, too, of a more definite order of things.

Another great impetus to the home product might be insured if at railway stations and other places where the public gather themselves in masses English fruit could be obtainable instead of the everlasting French Pears and American Apples; and I should like, if those ugly iron *impedimenta* called "automatic deliveries," or some such wonderful name, are to be tolerated, that they should, in response to the penny and the push, give orchard Plums instead of sugar plums, and Apples and Pears in preference to chocolate or candy.

Another idea that has long possessed me is the idea of selling of fruits from sample. According to present methods of distribution a producer gathers his fruit and carries it away to the markets, there to stand with a load of it until it is distributed. Those who have learned the art of modern marketing have found out that prices decline as the day wears on, for the grower does not desire to cart the piece of a load home again. On the other hand, there may be a system of "topping"—I may be excused if I explain (for of this my present audience is doubtless ignorant) that this implies a process, possibly accidental, by which the larger, better fruits in a basket gravitate towards the top! This is, of course, open to the suggestion of unfairness on the other side, but if the grower submitted samples of his fruit just in the way the farmer does who has grain or seeds to sell, an immediate relief would result.

A farmer does not think of carting the yield of his grain fields to the open markets, but asks the merchant to buy upon the sample placed before him in the market; and he can sell or hold as he then thinks best. He would then be in a less likely position for the imposition of injustice.

Then I think is the interests of distribution our leading agricultural and horticultural societies—agricultural societies especially—should recognise the industry, and admit home fruit products into the schedules of subjects for competition. I am glad to observe that the Royal Agricultural Society of England has taken up the matter, and hope other agricultural societies may now be induced to follow. It is likely that more good will arise from sources of this character than through minor efforts of less prominent bodies, as the subject would then be considered along with the problems of land cultivation in their more important and varied aspects.

I must not forget to include the all-powerful press. We have natural

friends in the editors of horticultural publications, but I am glad to see the general press of the country is now taking an interest in the question. Whilst many newspaper readers are evidently competent to take an intelligent view of the matter, there are some who seem to discern in the agitation something like the sectarian movement of a new faith, for which they have quickly set themselves to invent the name of the "Faddist." Well, let it be so.

If we are to get public attention called to the question, we may hope that the long-delayed interest will be fairly and fully aroused, and whilst we rejoice in the peace and prosperity of a nation preferring pruning-hooks and ploughshares to swords and spears, we shall yet the more rejoice when we gain the greater victory and proclaim the wider conquest of the sickle and the spade.

(*For continuation of Conference matter, see next page.*)



CYPRIPEDIUM TESSELLATUM PORPHYREUM.

This is one of the most handsome of the Veitchian hybrids, and as recently shown by Mr. B. S. Williams at a meeting of the



Fig. 43.—CYPRIPEDIUM TESSELLATUM PORPHYREUM.

Royal Horticultural Society its merits were very apparent. It was obtained from a cross between C. barbatum and C. concolor, but the characters, as to colouring especially, of the former predominate with a slightly altered shape. The peculiarly rich purplish tint has however, become intensified, and renders C. tessellatum porphyreum conspicuous amongst the C. barbatum family.

STANHOPEA TIGRINA.

Stanhopeas appear to be amongst the neglected Orchids, the short-lived character of their blooms fully accounting for this unfavourable attention ; but in spite of this failing they are worthy of some consideration, as their culture is of the easiest description, and their flowers never fail to command admiration. They are, moreover, what may be termed amateurs' plants, for any ordinary stove will suit them, and they are not so easily killed by injudicious management as many exotics that are cultivated by the amateur grower. I recently noticed a vigorous specimen of the above species in the gardens of Fair Lawn, Frome, which had several branching spikes, the strongest producing eight of its richly marked and wax-like flowers that, together with those of four or five other clusters formed, quite an imposing picture. They are growing in a basket, the only convenient method of culture, as Stanhopeas have the peculiarity of producing their blooms from the base of the pseudo-bulb, the pointed flower spike piercing its way through soil and hanging beneath at distances varying according to the strength of the plant. The blooming period can be considerably extended if several plants are grown. When in bloom they should be kept cool and dry, as this will tend to preserve the flowers to the fullest extent, but at the most they will only last a few days. They require suspending near the roof and abundant supplies of water given during the growing season, and they do not require frequent disturbance at the roots.—W. S.

NARROW VINE BORDERS.

The article by your able correspondent "Spectator" on the above subject was most interesting, especially with reference to the materials used in the construction of borders confined to such narrow limits. A gardener with whom I am well acquainted, and who is an excellent Grape grower, recently wrote to me confirming the opinion of "Spectator," and says he has great faith in the use of broken bricks for Vine borders either when forming new or renovating old ones. It is, however, since he has adopted the narrow border principle that their value has been more particularly observed, these naturally affording greater conveniences for observation. The top-dressing he applied for this season was a simple mixture of lime and broken bricks, in the proportion of two-thirds of the former to one of the latter ; and the surface of his borders are at the present time a perfect network of those large white roots, so desirable and pleasing to any Vine grower, and which "Spectator" describes as being so numerous in the sandy soil of one of the borders alluded to in his recent contribution. Another item which he attaches importance to is that of making the soil quite firm. Mallets are always brought into use when any additions are made, whether it is in making new or when a top-dressing only is applied ; and the Vines amply demonstrate the value of a firm soil, the canes produced in such being exceedingly short-jointed and sound in texture. This experience is not gained from one or two seasons' observations, but has been the practice for many years, and that, too, with unvarying success.

Abundant proof is given by "Spectator" that costly mixtures are unwarranted in the construction of Vine borders, and those who have such work in hand, or are contemplating it, are indebted to your correspondent for bringing forward these successful records of inexpensive Vine culture. No doubt further proof can be produced by able writers who have expounded the Grape scalding question so thoroughly, and as the present is an important period of the year for the work in question we may yet be favoured with their opinions on this topic also.

It would be interesting to know if the broken bricks or similar material have been used by other readers of the Journal, and with what results : the gardener under notice asserting that had he the necessity of making a new border he would not hesitate in using fully one-half of them if the soil was of a heavy or fibreless character.—W. S.

RUDBECKIA PURPUREA.

It gave me pleasure, as no doubt it did to many more, to see this fine perennial so faithfully illustrated in the last issue of the Journal. The peculiarly pleasing shade of colour which renders it so conspicuous in autumn is without a rival in the borders ; indeed so distinct is it, that I believe I am correct in saying the colour is unique among hardy herbaceous plants. The plant is a profuse flowerer, a fact which only enhances the value of one of our best border plants. I can readily imagine how such an uncommon colour would attract attention at Kew by the admiration which my own little stock has this season created, with hundreds of flower heads in all stages of development. It will be some years probably before it reaches the gardens of all who are anxious to have it, for its progress is rather slow. Bees are excessively fond of this species, and gather around it in great numbers on all bright days. Seeds, however, are rarely obtainable. Repeatedly have I endeavoured to procure some, but have not succeeded, and the very few which constitute a packet from foreign sources have never produced plants at all. Division, therefore, is the only safe method of increasing the stock, and as the rootstock is hard and woody, this must be done with care. Several of the species and forms of Rudbeckias possess a kind of rhizome, and are usually more or less evergreen. These creeping shoots root freely in their onward course, and thus afford ample means of increase. With the species under notice the rootstock is compact, very hard and brittle ; the roots also are wiry.

I consider early spring the best time to increase R. purpurea,

just as the new leaves appear above the surface. To insure dividing the plants with as little loss as possible the soil should be shaken or washed from the roots, when the operator will better realise what he has to contend with. I find a small three-tined hand-fork much better than a knife for dividing them, as the pieces split off from the main root far more readily than it is possible to cut them. A direct cut right through the plant with a knife—assuming it possible to get the latter through—will result in much loss of root, and from this cause I abandoned its use some years ago in favour of the hand-fork, and can only recommend those who desire to increase their stock of this handsome plant to do likewise. In large plants the crowns are numerous, and many may be had with roots attached, which should be potted singly and placed in a cold frame kept close and shaded till new roots are formed, and when well established in the pots, which they should be in a month or six weeks, they may be planted in the border in groups, always in a conspicuous spot. Some plants, I find, are more woody in the rootstock, and have only a hard single stem. Such as these it is difficult to divide, but I detach the new breaks—*i.e.*, growths with a heel, and insert as cuttings in the usual way, by which means I have this year obtained a small stock of plants. It is worthy of note that this still little known plant has a vigorous constitution and is self-supporting.—J. H. E.

SOME NOTES ON THE BARK OF FRUIT TREES.

The bark of a stem bears an important part in the well-doing of a plant, and it is right that it should be protected from harm when necessity arises; but some instances which have come under my notice have given me the impression that even in this matter we may be over-zealous. A close observation will show us that while some stems, for instance those of an Apple tree, have a glossy appearance and some elasticity, other have a hard dull look which is anything but pleasing. The former is a sure sign—other respects being equal—of a satisfactory condition, while the latter is a plain proof that all is not as it should be. To remedy this latter condition some have recourse to the knife, and make a longitudinal incision the whole length of the stem. In some cases it is not necessary to go the whole length, but several cuts, according to its thickness, may be made with advantage. When this is done care ought to be taken not to go deeper than the thickness of the bark. I have known this treatment prove so satisfactory that I think it might be practised more frequently. When a plant is in this bark-bound condition it is worse than useless to keep feeding, or rather glutting the roots with manure, for the inability to absorb this nourishment causes the roots to perish, and thereby hastens the plant's decay. Rather ease the bark and feed carefully for a time, and it will soon return thanks for the treatment it has received.

An instance which proved to me the advantage of this treatment was a Peach tree which for years made stunted growth, and the few blossoms it showed fell prematurely without setting any fruit. As a last remedy three long cuts were made through the bark, and as each cut widened the tree improved in appearance, so that now fine crops of fruit are annually gathered. Since I saw this experiment I have proved that it is equally applicable to all fruit trees, and the results on those of a more ornamental nature have been most gratifying. I need hardly add that this in itself will not cure unfruitfulness, but whenever the stem is so hard that it will not yield to the firm pressure of the thumb, a cut through the bark will lead to better results than a top-dressing of manure. The Vine seems to have a natural aptitude for this bursting of the bark more than any other fruit tree, and the wider it bursts so much the more fruitful it becomes, and the better able to perfect the crop.

A still rougher example of this system was brought under my notice in an orchard into which some cows were turned out in early spring when the pasture was at its scantiest. They attacked the trees, large and small, lacerating the bark with their teeth, and rubbing themselves against the stems, so that in some places the wood was bared. Like many others I thought the last fruit had been gathered from those trees, but after the cows were removed the bark commenced healing over, and although some portions of the stem will never again have their natural covering, the trees have fruited the same as before. In some cases a decided improvement has been the result. This is not put forth with the dictum, "Go thou and do likewise," but to show how far this easing of the bark may be carried without fatal results.

A large Peach tree was for some time a puzzle to me. The main stem of the branch on one side of the tree must have had its bark rubbed off when young, and had never healed thoroughly, yet this branch always set a full crop of fruits which, though not large, were of fine colour and flavour. On the branch at the opposite side, which was the very picture of health, the fruits never set freely, and yet the buds were always plump and promising. After seeing the orchard just mentioned, I cut a good slice of the bark clean away from the branch which was unfruitful, but being unused to such seemingly barbarous treatment, I cut it from the side nearest the wall where it would be less likely to be noticed. After this it fruited more freely than before, so that I had cause to be pleased with the experiment.—M. D.

PHLOX DRUMMONDI CUSPIDATA.

The numerous beautiful varieties of Phlox Drummondi as grown in this country are proved favourites in hundreds of gardens, but those introduced from the Continent a short time since under the names of cuspidata and fimbriata are extremely distinct departures. One of these, which has been received at Kew and grown under the name of Phlox cuspidata, is shown in the woodcut (fig. 44), and is marked by the lobes of the corolla being prolonged into acute points. In some of the



Fig. 44.—PHLOX DRUMMONDI CUSPIDATA.

flowers these points are very long, and impart a star-like appearance to the flowers. The colours present a similar range to the ordinary P. Drummondi, but purple seems to predominate. The only appreciable difference between the varieties cuspidata and fimbriata is that in the latter the lobes are not so much prolonged and they are rather more irregular.

COMPENSATION FOR ORCHARD PLANTING.

By Mr. William F. Bear, Streatham.

It is no doubt solely because of the great interest which, for many years, I have taken in compensation for tenants' improvements, that I have been invited by the Committee of this Conference to read a paper upon a subject of the practical details of which I probably know less than any person in this room. I must confess that I felt a strong disinclination to place my views before a body of experts, and if anyone but your worthy Secretary, who has been very obliging to me on more than

one occasion, had asked me to come forward, I should have declined. For should anyone ask me what I know about orchard planting, I should have to reply, Next to nothing. When I took a farm some years ago I planted some fruit trees, and had them in fine bearing condition by the time that I quitted the holding, to the advantage of my successor. More recently I have planted some Apples and Pears in a suburban garden, and have scarcely seen a blossom on any of them for the last three years. However, my subject is not planting, but compensation for planting, and upon that topic I have very decided views, and few persons, I believe, have given more thought to it. Still, as my object is to elicit discussion rather than to air my own opinions, I shall be as brief as possible in my remarks.

Cultivators of the soil are constantly being told that they should grow more fruit. Ordinary farming does not pay and is not likely to pay, it is contended, and farmers should turn their attention to the production of vegetables and fruit. Now there is no reason to fear that too many farmers will take that advice, the rank and file of the class being very slow to make any important changes in their routine. It is obvious that if even a twentieth part of the land of the United Kingdom were devoted to the growth of culinary vegetables and fruit, the market would be glutted unless the nation were converted to vegetarianism. But, as I have said, there is no reason to fear that too many farmers will become market gardeners and fruit growers, and there will be all the less reason to expect this if, as I believe, a turn in the tide of ordinary farming as a business has set in—whether for a long or for a short period it would be rash to predict. The fear is—to confine myself to fruit-growing—that, in spite of the "boom" which appears to have been started in that industry, its development will be slower than is desirable. There are many reasons why it should be so. Enough has been said in recent years, and said over and over again, to prove that it is desirable to grow more fruit, and especially more choice Apples and Pears, in this country. The question is, how to do it? Now, in my opinion, Mr. Rivers, in his speech as chairman of the Fruit Growers' Conference held the other day in the Crystal Palace, went the right way to work to show how not to do it. Alluding to the obstacles of fruit-growing, he is reported to have said that landlords, land laws, railway rates, and middlemen have nothing to do with them. A more astounding assertion I have seldom read. In my opinion they have pretty well all to do with them. It is our land laws which render fruit-planting an unsafe speculation, and high railway rates and a bad system of distribution (the middleman element) which render fruit-growing less profitable than it should be. I think my friend, Mr. Albert Bath, was on the right tack in the paper which he read at the first Crystal Palace Conference, and not Mr. Rivers, who declared ignorance to be the fundamental hindrance to extended fruit culture. No one is a more earnest advocate of agricultural and horticultural education than I am, and no one is less disposed to say anything to underrate the advantages of either branch of instruction. But, in my opinion, for one cultivator of the soil prevented from growing fruit by ignorance, there are twenty who are deterred from lack of security to capital invested in planting, high railway rates, which render it unprofitable to grow anything except high-priced early produce if it has to go a long distance by rail, and our abominable system of distribution, which gives more profit to the middleman for a day's, or sometimes for an hour's work, in handing fruit on to customers, than to the producer who spends a year in growing it.

Returning to the question, How is fruit-growing to be increased? I must pass by, as beyond the range of my subject, all details relating to such obstacles as high railway charges and the middleman's undue share in the amount paid by consumers for fruit. In considering how to answer the question asked, another at once crops up—Who is to plant? Now our land laws are directly opposed to planting, as far as they go. By encouraging limited ownership through the settlement of estates they render it disadvantageous to most landowners to plant, because the limited owners, who form the great majority of the landlord class, by sinking their capital in orchard planting, would reap only a transitory benefit themselves, and that only if they lived several years, while they would enrich the already too highly favoured heirs to their land at the expense of their younger children or other relatives. For reasons which it would take me very wide of my mark to-day to state, I am not in favour of increasing the powers and privileges of the owners of land by making them absolute owners, and I allude to limited ownership merely to show that under it there is no reason to expect extensive orchard planting by landlords. We come now to the tenants, and are thus brought within the precise confines of the subject of this paper.

Mr. Rivers appears to argue that the land laws have nothing to do with the indisposition of cultivators to plant fruit, because in suitable situations and under proper management fruit-planting will pay with laws and rents as they are. No doubt it will, provided that the planter has a long lease and lives long enough to reap the fruits of his enterprise, or if—and this is a very large "if"—he can induce his landlord to consent to the planting, so that he will be entitled to compensation under the Agricultural Holdings Act, or to arrange otherwise to compensate him or his heirs when he quits his holding or dies. These "ifs" and "ors," however, are shadowy particles, and a substantial and disagreeable "but" nearly always comes in to put them to flight. Without the consent of the landlord in writing the law fails to afford the fruit planter, whether he be a large farmer or an allotment holder, a halfpenny of compensation for capital sunk in the planting of fruit; and I doubt whether that consent can be obtained by one out of a hundred tenants. The tenant, then, has no legal security for fruit-planting, and if he plants without security he incurs a very serious risk. It may be contended, perhaps, that a long lease affords sufficient security, but that I entirely dispute, because a man may die before he has reaped any benefit from his expenditure, and it may be inconvenient for his executors to carry on his business, or he may be obliged to remove, either from getting into difficulties or from some less disagreeable cause. Therefore a lease is but a delusion as security unless it contains compensation clauses or embodies a right of assignment. Moreover, a lease never affords adequate security unless it is a very long one, even if the holder of it farms it out. Even then, at the end of the lease, the improving tenant—or rather, the law—hands over to the landlord property which rightly belongs to himself.

It is not necessary to say before my present audience that the expense of orchard planting is no light one, or to point out that some years must elapse before the planter can hope to obtain a satisfactory return on his outlay. Probably there is no gentleman here who could not tell me a great deal more about the cost of planting than I can tell him. But as there may be readers of this paper who are not experts, and who may like to have the estimates of experts on the cost of planting different kinds of fruit, I submit such estimates. There is no lack of them in print, but most of those in my possession are two, three, or more years old, and expenses vary with the times. I therefore asked Mr. Charles Whitehead to give me his estimates for the present time, and I have to thank him, a busy man—though for that matter, busy men are generally the most obliging in affording information—for kindly complying with my request. In giving Mr. Whitehead's estimates, I must point out that they do not include the cost of preparing the land, or any portion of the rent, tithe, rates, and labour expenses after planting which fall due before the trees come into profit.

Cost of Planting One Acre of Fruit.

	£ s. d.	£ s. d.
Standard Apple trees, 22 feet apart (90 trees) ...	6 0 0	
Planting and staking	2 17 6	
		8 17 6
Plums or Damsons, 18 feet apart (134 trees)... ...	7 15 0	
Planting and staking	3 15 0	
		11 10 0
Apples and Plums mixed, 20 feet apart (108 trees)...	7 0 0	
Planting and staking	3 5 0	
		10 5 0
Bush fruit trees under Apples, 1440 to the acre, 5½ feet apart, at 13s. per 100	9 0 0	
Planting bush trees	2 15 0	
90 Apples and planting and staking	8 17 6	
		20 12 6
Bush fruit with Plums or Damsons—1440 bush fruit trees	9 0 0	
Planting ditto	2 15 0	
134 Plum or Damson trees, and planting and staking	11 15 0	
		23 10 0
Strawberries 30 in. × 18 = 11,616 plants, say 12s. 6d. per 1000	7 4 3	
Planting	1 15 0	
		8 19 3
Strawberries, 30 in. × 12 = 17,424 plants at 12s. 6d.	10 18 6	
Planting	2 7 6	
		13 6 0
Raspberries, in rows 4 feet apart, three plants to a hill or centre = 10,890 plants	10 17 6	
Planting	2 5 0	
		13 2 6

Mr. Whitehead adds: "All these rates are according to present cost of fruit trees and present labour wages. The land, of course, must be deeply ploughed, and in many cases a subsoil plough should follow the ordinary plough. Harrowing also is necessary to get a level surface. Upon land in cultivation a good dressing of manure would be necessary, say 20 tons per acre. Some land would require trenching."

Mr. Albert Bath, of Sevenoaks, has also kindly sent me some estimates, which represent the actual cost of planting now being carried out under his superintendence.

COST OF MANURING, PLOUGHING, SUBSOILING, TREES, AND PLANTING PER ACRE.

	£	s.	d.
Apple plantation, trees 20 feet × 20 feet apart	21	0	0
Plums, 20 feet × 20 feet	18	16	0
Pears, about same as Apples	21	0	0
Mixed plantation of Apples, Pears, Plums, 20 feet × 20 feet, with bottom fruit—Currants and Gooseberries	35	8	0
Raspberries (manuring and cultivation as above, excepting subsoiling)	17	5	0
Strawberries, ditto...	13	7	0

Mr. Bath remarks that fruit trees and Raspberry canes are as cheap as they were six years ago, but that Apple trees are in great demand, and will soon be dearer.

Although the planting of Strawberries and Raspberries does not come under the head of orchard planting, the estimates for these crops are allowed to appear in the list. I may add that Mr. William Vinson of Orpington, Kent, has kindly given his estimates of the cost of planting of an acre of these varieties of soft fruit. Including the first year's cultivation, rent, rates, &c., he says Raspberries cost about £15 an acre, and Strawberries about £10.

The veriest outsider must see from these figures—and especially from those relating to orchard planting—that it would be very risky for a tenant to engage in that enterprise without security as to compensation for the unexhausted value of his improvements; and it is to be borne in mind that Mr. Whitehead's totals should be larger than they are, because they do not include additional expenditure incurred while waiting for the trees and bushes to bear.

How, then, should compensation be given? Personally, I am a strong advocate of the plan of allowing the tenant to sell his improvements in the market, with pre-emption to the landlord. Elsewhere, and on many occasions, I have shown how I would safeguard the just claims of landlords in making the necessary arrangements for free sale. There is not time to allow of my going into details upon that topic today. Moreover, to do so would be needless repetition, for are they not written in the chronicles of the Farmers' Alliance—an Association which would have done great things for the farmers and fruit growers of the country if they had sufficiently supported it? In my opinion, free sale is far superior to the valuation system. When told that it involves dual ownership in land, I always say in reply, that where two persons invest their capital, and inextricably mix it in the same piece of land, you must have dual ownership or confiscation. There is absolutely no other alternative; and if you have a right to compensation by valuation, you have dual ownership just as much as if you have free sale. Again, I am told that free sale has not succeeded in Ireland; but the reply to that is that it was a splendid success in Ulster before Mr. Gladstone meddled with it, and, in my opinion, muddled it. Having visited Ulster, I say that the results of free sale there are wonderful. Considering the disadvantages in respect of situation, climate, and often of soil also, under which the farmers in that province laboured, what they did, stimulated by the security afforded to them by free sale, long before the Land Acts were passed, is a striking proof of the value of the principle.

It must be confessed, however, that free sale is not popular in this country. It may further be admitted that the system of compensation by arbitration and valuation can be carried out more satisfactorily in relation to fruit trees than in the case of ordinary farm improvements. The trees are on the ground, and can be counted and valued, and their condition indicates how they have been manured and otherwise treated. In some parts of Italy it is the practice to make an inventory of all the trees on a holding when the tenant enters, describing the number of trees of each kind in each enclosure, indicating the condition of the whole in general, if not of each, and valuing them. When the tenant quits a similar inventory is made, and he is entitled to receive, or required to pay, any difference in the two valuations, according to whether he has caused appreciation or deterioration during his tenancy. Whether or not any allowance is made for natural improvement on the one hand, or deterioration similar to the reasonable "wear and tear" in a house on the other, I cannot say. Perhaps some such plan could be adopted in this country.

The simplest reform, however—and I believe that fruit-growers and farmers can get it if they will but act together—would be that of striking out the stipulation in the Agricultural Holdings Act which requires the landlord's consent to entitle the tenant to compensation for planting fruit trees and for other permanent improvements. But as I have always been a friend—an unappreciated friend—to landlords, I must state one objection to this proposal. It would be hard to come down upon a poor, embarrassed landlord, or upon one fairly well to do, but only a tenant for life, for £20 an acre or more on 100 or 200 acres, in the form of compensation to an outgoing tenant. Therefore, it seems to me that if the tenant is to be entitled to compensation for costly improvements made without his landlord's consent, the latter should have the option of presenting the right of free sale to the former. Or, perhaps, as landlords have always opposed free sale, it will be but a fitting lesson to them to make the amendment in the Agricultural Holdings Act just suggested, and to leave them to sue for free sale, which I fancy, under the altered circumstances, many of them would very quickly demand. At any rate, in one way or another, I contend, it is the right and the duty of the public to insist that the law of the land shall be so altered as to encourage, instead of hindering, the greatest possible development of the resources of the soil. They should not recognise the right of a man who is allowed to "hold an estate in land"—the nearest approach to absolute ownership recognised by the law of this country—to keep it as a desert waste, or anything like a desert waste, if it will pay for improvement, and there are capitalists able and willing to improve it. Or, to limit the application of this principle of public right and duty to the subject before us, I say that the people of this country, desirous as they are to see planting increased, should insist on their representatives in Parliament, without unnecessary delay, so amending or adding to the statutes as to afford to every cultivator of the soil full security for the unexhausted value of any improvement in the planting and culture of fruit which he is able and willing to carry out.

Notes & Gleanings

THE GARDENERS' ORPHAN FUND.—Some friends, thinking the Apple and Pear Conference last week favourable for doing something on behalf of this charity, organised a concert under the auspices of the Chiswick Gardeners' Mutual Improvement Society. This was held in the Vestry Hall on the evening of the 19th inst., and the visitors were well satisfied with the musical treat afforded and the beautiful floral decorations of Messrs. Roberts, Hudson, May, and Fromow & Sons. Mr. A. Dean was the chairman of the evening, but his efforts were quite unavailing to prevent encores. Mr. J. Barry distinguished himself by a recitation, and the chairman of the Fund, Mr. G. Deal, explained its origin and working with great lucidity, and said if £7 or £8 could be obtained at such an enjoyable meeting, the sum would afford support to a needy child for half a year. He commended the example of the Chiswick friends to others who might possibly help in a similar manner, and at the same time provide pleasant evenings' entertainments during the winter months. We are informed the suggestion is being considered by Messrs. G. Cannan and J. Dixon, managers of two of the branches of the extensive nurseries of Messrs. Lee & Son, Hammersmith.

—— THE NOTTINGHAM HORTICULTURAL AND BOTANICAL SOCIETY.—A Chrysanthemum, Fruit, and Potato Show is announced to be held on Wednesday and Thursday, November 21st and 22nd, at the Arboretum Rooms, Nottingham. The prizes offered by Mr. R. Saukey, Bulwell, for the best essay "On the Duty of the Employer to his Gardener" will be divided as follows:—First prize, 20s.; second prize, 15s.; third prize, 10s.; which will be accompanied by the first, second, and third class certificate of the Society. The essay must not exceed fifteen minutes in reading. It will be read by a competent person, who will be appointed by the Committee, and must be sent to the Secretary, sealed up, and with a number or motto, but not the owner's name, not later than Monday, December 9th. The competition is open to all the members of the Society, and the papers will be read at the meeting on Wednesday, December 12th, 1888, at 7.30 P.M.

—— MR. WM. KERL of Angmering, Worthing, writes:—"Last year I gave an account of GRAFTING APPLES UPON PEAR TREES. This year I have continued the experiment, and have grafted twenty-six scions of good Apples upon such Pear trees that were unfruitful or bore worthless Pears. Twenty-one have taken with strong shoots. The Apples I send were from the Pear tree I mentioned last year. In the neighbourhood of St. Albans they are called 'Worsted Stockings,' and

are very sweet and good up to Christmas. In the 'Fruit Manual' the nearest approach to them is the Aromatic Russet, or Spice Apple, and Morris's Nonpareil Russet. Will you kindly inform me in your Journal if they are one of these or have they any other name?" The variety sent is Morris' Nonpareil Russet.

—— GARDENING APPOINTMENTS. — Mr. W. K. Woodcock has resigned the charge of the gardens of Mrs. Firth at Oakbrook, and Mr. John Pentland, late gardener to Miss Glyn, has been appointed his successor. Mr. Woodcock has taken the Syston Nurseries, near Leicester, and enters upon them on the 1st of November. Mr. Woodcock carries with him the good wishes of his numerous friends in Sheffield and other parts of the country, and hearty desires for his future prosperity and success. Mr. John H. Bowden asks us to notify his appointment as head gardener to W. G. Spicer, Esq., Oakwood, Camden Wood, Chislehurst, Kent. Mr. W. Smith has succeeded Mr. Wm. Hewett as gardener at Oakleigh, Merstham, Surrey.

—— THE Mercers' Company, one of the oldest and wealthiest of the City Companies, is thinking of establishing an AGRICULTURAL COLLEGE. A correspondent of the *Times* says it proposes to devote £60,000 to this object. According to the same authority, the intention is that the College shall be in Wiltshire, and that there shall be attached a farm of considerable extent, in which the pupils may practically apply the knowledge they gain, the institution being intended to benefit the sons of farmers and others who will be dependent on the successful culture of land for their future livelihood. The sum of £60,000 contributed by the Company would, it is hoped, be supplemented by a liberal donation from the Charity Commissioners, and the Company would of necessity be prepared to provide an adequate endowment. An establishment of this kind with such substantial pecuniary support might be rendered a most important and valuable institution.

—— Mr. C. OSMAN writes :—"The 8 acres of POTATOES referred to in my note on page 332 are now lifted, and there is a capital crop of Redskin Flourball. None is diseased ; of Reading Giant, Reading Hero, and Magnum Bonum very few. Imperator was rather more affected, about 1½ bushel diseased from several tons. Altogether the results were very satisfactory."

—— CULZEAN ONIONS.—Mr. David Murray, the grower of the magnificent Onions referred to on page 336 as exhibited at Banbury, writes :—"The Onions were grown with Thomson's Vine manure. I always turn up the Onion ground into ridges. In spring before we start to level them down for the seed, we give the ridges a good dressing with the manure, and again when the Onions commence to bulb. That is the treatment that they had this year. I sprinkled a good dressing amongst the bulbs and watered it in. I was anxious to grow six to the stone (14 lbs.), but I was beaten by an ounce, but if well I will have another try." We hope Mr. Murray will accomplish his desire next year. It will be remembered the largest of the Onions referred to was 18 inches in circumference, and only an ounce less than 2½ lbs. in weight.

—— THE WEATHER IN NORTH YORKSHIRE.—The weather in this district was very severe in the first week of October. On the morning of the 1st inst. 6° of frost were registered. Snow fell heavily from 8 A.M. till noon, the afternoon turned out fine. On October 2nd we had 13° of frost, which played sad havoc in the kitchen garden and flower garden. Dwarf and runner Beans were cut down. Broccoli has much the same appearance as it would have in March, with the exception of Purple Sprouting, which is unhurt. Celery leaves are turned brown. Walcheren Cauliflower is not hurt in the least. All bedding plants were killed to the ground. Herbaceous plants also suffered much. Amongst shrubs the Aucuba has fared the worst, the young growths are black, and the young shoots of the common Laurel are also badly affected. Farmers in the neighbourhood have sustained a serious loss, as few of them had gathered their Apples or Damsons ; both are completely spoiled. The latter were sold in Kendal Market a week ago at prices ranging from 9d. to 1s. 6d. per hamper of 20 lbs. Even the Hazel Nuts in the woods are not eatable, the kernels are quite soft. During the week we had a total of 52° of frost.—C. RUSSELL, *Ingmire Hall Gardens.*

—— IN a recent number of a medical serial the free use of FRESH RIPE FRUIT as an article of diet is strongly recommended. Apples, Pears, Plums, Apricots, Peaches, Gooseberries, and Grapes are spoken of as being at the very summit of excellence as human food, for they possess the essential conditions of pleasantness, digestibility, nutrition, and medicinal value. With respect to Apples a late learned professor recommended every family to lay in a stock in the autumn, saying it would be the most economical investment they could make. "A raw mellow Apple is digested in an hour and a half, while boiled Cabbage requires five hours ; and if taken at breakfast with coarse bread and without meat of any kind fruit has an admirable effect on the general system, often rendering medicine quite unnecessary. It seems universally agreed that, as a community, we do not eat nearly so much fruit as we ought to do. Some authorities say that if the consumption was increased tenfold it would not be too large. There is no doubt that a really cheap and abundant fruit supply would mean a great improvement in the national diet, with a corresponding effect upon the health of the community, so that it is desirable on all accounts that owners and occupiers of land should bestir themselves and make the orchards of the country an increasing source of wealth, and fruit-growing a great national industry.

—— THE VALUE OF CALIFORNIA FRUIT LANDS.—The question of land value in California is one which, in the fruit region at least, is open to discussion from various standpoints. A Redlands correspondent of the "American Garden" says :—"There are numerous instances of enormous profits from Oranges, yet if I were asked to say to an inquirer what a man may count upon I would figure 200 dollars to 300 dollars an acre. Orange growers are like all other farmers—one will get double out of an acre what another will. The Orange requires assiduous and intelligent culture for big results. Then it is quite the custom to suppress certain facts and enlarge on others. Here is a sample : A man had a prodigious crop of raisin Grapes—seems to me thirty tons or so on two acres. A raisin grower in another town could not believe it and went to see. The fact was as stated, but there were eighty acres in all cultivated without irrigation. The two acres were a sort of sink hole, very wet, and produced three times as many Grapes as the other seventy-eight acres. How did the crop average? That was not published, but very few keep accurate accounts. A Grape grower told me that, in response to circulars sent out by the Redlands Board of Trade asking for statement of expenses and results of various crop cultures, his was the only one sent back with accurate details. His figures on Muscat Raisin Grapes gave him 130 dollars per acre, the first decent crop. The second crop was 160 dollars, and this year he hopes to do better, and his is a fine vineyard. He represents the conservative side of these fruit yarns."

NOTES ON TOMATOES.

TOMATOES are rapidly becoming everybody's favourites. A medical man remarked to me the other day that they were bidding fair to become as generally used as Potatoes. There is no doubt that they are coming rapidly to the fore as an article of diet, and the more they become known the greater will be the demand, which the supply at present does not equal. Outdoor crops this year in most places have been a failure, consequently they are higher in price, and on that account can hardly be said to be within the working man's reach except as a luxury. If they could be grown and made to pay at 4d. per lb. there would be plenty of buyers. Disease is said to have attacked them badly in some districts this year. It is still unknown to us, and I have no desire to make its acquaintance.

We do not attempt growing them out of doors here in this cold wet district of Lancashire, but can obtain fair crops under glass which if marketed would pay at say 6d. per lb. wholesale price. This year we have grown nine varieties, and a few remarks on their merits may not be out of place. Sutton's Earliest of All was our first crop and kept in bearing from April to June inclusive. The flavour is good, and it is a free setter. Vicks' Criterion is a good cropping variety, smooth and even in size, of good flavour, and well worth growing. Webb's Sensation is another good sort ; the colour of the fruit is much the same as Criterion, but the fruits are round and larger than that. Last year this variety grown at Chiswick was reported to be the same as Large Red. I have grown the two side by side, and find they are quite distinct. It is a more handsome fruit than Large Red. Hathaway's Excelsior we have grown for some years, and class it among the best of Tomatoes. The fruits set well this summer considering the dull sunless days. Trophy is an old variety that I should not grow again. It attains a large size, but it is so coarse and ugly that it is not worth a place. Golden Queen we have grown for the first time this year and like it well. The flavour is not quite so good, perhaps, as some of the others, but it is a good cropper with pale yellow smooth fruit, and is liked at the table mixed with others. Hackwood Park is a first-rate variety, and has succeeded the best of any here. It has set and cropped heavily, many of the fruits weighing half a pound and some over. We have still a number of fruits hanging that will keep for some time to come.

Queen is one of the small plum-shaped varieties that I consider well worthy of a place in any collection. It is a heavy cropping variety, and when ripe is very attractive. It is also a first-rate flavour and does well for mixing with salad without being cut up. I observed a week or two ago Mr. Iggulden was condemning the small varieties as not worth growing and not nearly so good in quality as the larger growing sorts. I send herewith a few fruits of Queen, and perhaps you will kindly give your opinion as to quality. In my opinion it is the best flavoured of all I have named. I readily admit it would not be so profitable to grow for market, but for home use I think a few plants worth a place.—G. HILTON.

[Our opinion was given in answers to correspondents last week, before this communication was read. We stated the variety was Nesbit's Victoria or a selection from it. A few plants are well worth growing in private gardens.]

CHRYSANTHEMUMS

HINTS TO INTENDING EXHIBITORS.

THE following remarks are intended mainly for those who purpose becoming exhibitors for the first time at some of the coming shows. The greatest mistake made by exhibitors is that of attempting to do too much at once—that is going to too many shows in one season, and entering and staging in too many classes at one date. Much better would it be if exhibitors contented themselves with fewer classes, which they might fill far more creditably to themselves as well as to the credit of the exhibition. Of course if the means—a sufficient number of blooms—are at hand to fill many classes at one show, so much the better, as the expense of taking a lot is not much more than taking a few. "A name" is much more easily made by "sweeping the decks" at one show than by competing at several places in one or two classes and possibly taking second and third prizes in many instances. See that the entries are carefully made on the proper forms accompanying the schedules and punctually sent in to the Secretary. If possible send in the entry two or three days before the appointed time, as this is of assistance to the officials in preparing the necessary cards and positions. Attend early to procuring suitable stands, boxes, cups and tubes, tweezers and proper labels, on which the names should be plainly written. The work of arranging the blooms in the stands must of necessity be tedious and often perplexing to the beginner, but by studying closely the information given by others the work is simplified.

It is a good plan to practise on blooms that are useless for exhibition, or upon such that are not needed for competition. The right method of staging is much more easily obtained by practice combined with studying other people's ways. Dressing blooms of the incurved section requires much practice and patience before efficiency is gained. Dressing the blooms consists in arranging the petals in a straight, even, smooth manner, removing damaged or imperfect florets, filling up the centre of each flower by cupping them sufficiently tight with the tube placed under the bottom row of florets. When many blooms have to be cut and staged some method must be employed to properly carry out the work. The best plan is to note the varieties available. Selections can be made from this list of varieties that are best suited for the back, middle, and front rows, so as to insure uniformity throughout the stand. The largest blooms should be placed at the back, and so on in proportion. If the list be marked with figures 1, 2, and 3, indicating the blooms that are intended for each row in the stand, the work of staging will be facilitated considerably. A glance at the list suffices to show the position each variety will occupy in the stand. An early start should be made in preparing the blooms, so that the work be not hurried at the last moment. Packing the stands in the boxes should be performed carefully, or some damage may be done to some of the blooms during transit, such as one flower chafing against its neighbour when they are placed in the stands in a loose manner. Prizes have often been lost through faulty packing.—E. MOLYNEUX.

CHRYSANTHEMUMS IN IRELAND.

I FIND that in this locality most of the growers complain that their plants are likely to come into bloom much later than last year, particularly those grown as specimen plants. The plants grown to produce large show blooms are also rather backward. Some growers fear they will not be ready in time for our local show, to be held on November 13th. It is also noticed in most of the collections that damp is seriously affecting the blooms which are now opening, particularly white and pink varieties. I should like to know what reports growers in other localities have to give.—THOMAS PHELAN, *Clonmel*.

CHRYSANTHEMUMS IN STAFFORDSHIRE.

FROSTS are of nightly occurrence here accompanied by dense fogs. My plants were caught in the frost three weeks ago, but were not very much damaged. Peter the Great suffered the worst, and the Japanese collectively more so than the incurves. A new exhibitor has arisen in Staffordshire, but I must not divulge his name yet. He will commence his career this season all being well, but he will make it "hot" for somebody next year. He has 1000 capital plants for large flowers, but is short of incurved varieties—plenty of plants.—A GROWER.

CHRYSANTHEMUM TUBES.



FIG. 45.—CHRYSANTHEMUM TUBES.

IN the woodcut (fig. 45) some convenient Chrysanthemum tubes are represented, each being furnished with two springs at the base of the tube by which it can be steadied in the water tube and fixed at any requisite height. We understand that they have been invented and patented by Mr. Lindsay of Otterspool Gardens, Liverpool, who is well known as an accomplished stager; and, as advertised last week, they are being supplied by Messrs. Cannell and Sons of Swanley.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the Floral Committee was held in the Royal Aquarium on Wednesday last, October 24th, when numerous novelties were exhibited. The members present were E. Sanderson, Esq., in the chair, and Messrs. W. Holmes, G. Gordon, Lewis Castle, H. Cannell, C. Gibson, Bevan, R. Owen, Stevens, Mardlin, C. Swift, J. P. Kendall, R. Dean, and S. Gilbey.

Certificates were awarded for Sunflower (Japanese) and Nelson Japanese Anemone from Mr. W. Holmes; Violet Tomlin, an incurved sport from Princess of Wales, much darker in colour, from Mr. Doughty, Angley Park Gardens, Cranbrook, Kent; Magicienne (Owen), a Japanese; H. Shoesmith (Davis & Jones), incurved, a beautiful bronze sport from Mr. Bunn; and Stanstead Surprise (Laing) a large Japanese with long rosy crimson florets and lighter reverse, very handsome and distinct. Commendations and vote of thanks were also awarded for several varieties from Messrs. J. Veitch & Sons, W. & G. Drover, W. K. Woodcock, R. Owen, G. Stevens, W. Piercy, and W. Holmes. The best of the varieties thus recognised were May Tomlin, a sport from Mdlle. Dutour, Lincolns Inn, and Sam Henshaw.

AT CAMBERWELL.

THE interest in Chrysanthemums is rapidly re-awakening, and those devoted to showing and growing, both amateurs and professionals, are preparing for a busy season. Inquiries are being made respecting neighbours' and possible rival competitors' collections, and the nurseries are attracting their usual visitors, who are desirous of learning what promising new varieties may be worthy of notice, what recent introductions maintain their characters, and what old varieties still keep their places as indispensable. Owing to its proximity to railway stations, its short distance from the city, and the fact that Chrysanthemums constitute the exclusive specialty, the Lilford Road Nurseries, Camberwell, is usually selected as one of the establishments to be inspected, and Messrs. Davis & Jones always succeed in rendering their collection well worthy of a visit. This season seven houses are devoted to Chrysanthemums, ranging in size from small compact span-roof structures to the spacious show house, 65 feet long by 30 feet wide, and proportionately lofty. Some of the houses have been occupied with plants grown for cutting, such useful varieties as Roi des Précoces and Lady Selborne having prominent attention. The former is an excellent early and free flowering Chrysanthemum, the light graceful blooms of a rich crimson hue, quite distinct and capital for arranging in vases or stands. It makes a good companion for Madame Desgranges, yielding an astonishing number of blooms, and its value has been already well proved as a market plant.

The collection comprises all the leading varieties in the different sections, together with most of the continental and American novelties. The incurved are promising well, and Mr. Davis ventures on a prophecy that these varieties will be found more generally satisfactory than usual, perhaps because a cool damp summer is less trying to the plants than an excessively hot and dry one. Certainly substantial buds and blooms are expanding steadily but freely, the "Queen family," the "Dixons," "Rundles," and "Glennys" looking capitally, while of the later varieties Princess Teck and Charles Gibson are in strong force and excellent condition. Of Mr. Bunn there are numerous fine blooms; but the most notable in this section is a bronze sport from Mr. Bunn named H. Shoesmith, which, while possessing all the chief characteristics of its parent in style of bloom and habit, is distinguished by its bright bronzy orange hue. It appears to be well proved and fixed, and for the earlier shows, where Mr. Bunn can be shown to advantage, this will be found useful as a companion. Beverley, Golden Beverley, Mr. Bunn, and H. Shoesmith now form quite a family in the same way that Princess of Teck, Hero of Stoke Newington, and Charles Gibson constitute a family type. With regard to the incurved, it might be added that Bronze Queen appears to be developing much better blooms than it has done before, and judging by those at Camberwell it may yet become a favourite exhibition variety.

The Japanese are as usual very numerous, and some most interesting comparative trials of new varieties have been carried out, with the result that unquestionable identity has been established between several

of the recent Japanese introduced to this country from Japan and *viâ* America. Concerning these there will be much to be said by-and-by, for the matter is an important one, and it is rather serious to find varieties obtained from several different sources under distinct names prove to be identical. Very beautiful is Florence Percy at the present time, its quilled and twisted pure white florets imparting quite a lace-like appearance to the blooms. Priscilla is one of last year's Japanese with bronzy red or cinnamon blooms, of long irregularly cut and twisted florets with a yellow reverse. Edwin Molyneux, C. Orchard, and Belle Paule are showing well, as also are Edouard Audiguier and its beautiful golden counterpart, M. Garnar. A pretty variety of the Japanese reflex style, Dr. Dor, is worthy a note, the florets fluted, recurving, and bronzy buff, a very distinct shade of colour. Many others might be mentioned, but the above will suffice to show that the interest of the Camberwell collection is fully equal to that has possessed in past seasons.

AT CHILWELL.

JUDGING from the appearance of the plants in the well-known nurseries of Messrs. J. & R. Pearson & Sons, the display of Chrysanthemums there is likely to be one of the most extensive in the kingdom. The exhibition was fine last year, and admired by thousands of visitors from Nottingham and surrounding district, while not a few persons journeyed long distances to the great Midland show and went away satisfied. The plants are still finer this year, and more numerous. Six large houses are filled with them, but the chief display is represented in a light and lofty span-roofed structure 100 feet by 30 feet. The plants are arranged down the centre and along both sides. The varieties that produce the finest blooms are disbudded for producing them, and as they are strong, with handsome foliage and ripe wood, some superior examples may be expected. Edwin Molyncux is fine now, as are a few others, but the time has not arrived for particularising varieties. Those which are essentially free in flowering are grown in large bushes and not disbudded, so that their character for decorative purposes is displayed, and their capacity for producing trusses for cutting represented. A few well-trained specimen plants are also included, as are small plants in 5 and 6-inch pots for table and window decoration. The collection, which includes all the best varieties, old and new, is indeed a typical one, and such as Mr. Charles E. Pearson and his assistant may be proud of. Many persons travel far to see what is to be seen in the Chrysanthemum world, and if possible they should not omit Chilwell when the plants are about their best, in November. It is within a mile from Beeston station, which is reached from Nottingham in seven or eight minutes.

AT MORDEN PARK.

THE Chrysanthemums at the residence of J. Wormald, Esq., Morden Park, Surrey, have for some years constituted an important specialty under Mr. C. Gibson's charge, and many honours have been won in keen competition at the leading metropolitan and suburban shows. This season over 400 plants are grown, and they look extremely well, indeed Mr. Gibson thinks he has never had the plants in better condition. Blooms also are coming freely, but possibly some of these are rather too early for the show season, though there will still be plenty left to win some prizes. It is rather strange, however, that when so many are complaining of the lateness of their blooms the Morden Park collection should be so forward, and it is a disadvantage, because it is found that blooms are not keeping well, the lower florets failing before the bloom in some cases is half developed. Probably the fogs and heavy mists have had some effect in this direction. The incurved varieties are very satisfactory, and fine examples are noted of Mrs. Shipman, Princess Beatrice, and the Queen type, the last named being uncommonly good. Of Japanese, Edwin Molyneux is grandly represented, also C. Orchard, Criterion, Phœbus, Peter the Great, Boule d'Or, Mrs. Cannell, Mr. Garnar, White Dragon, and Avalanche. One of the varieties in the Japanese with which Mr. Gibson excels is Grandiflorum, though this disappoints many growers, and it is thought the cause of this is to be found in taking the crown instead of the terminal bud. At any rate Mr. Gibson relies exclusively upon the terminal bud, and never fails in obtaining good blooms, and the earlier this bud can be "taken" the more chance there is of the blooms coming in for the shows. Lady Trevor Lawrence and Mrs. H. Cannell have been found to be identical here, though received from a reliable source, and as we hear the same complaint elsewhere it is evident there is some confusion, and exhibitors will do well to carefully ascertain that varieties under these names are really distinct before placing them in one stand, or they may run the risk of disqualification. It is not questioned that the varieties first exhibited as Lady Trevor Lawrence and Mrs. Cannell were distinct, but it is quite clear that there has been some mistake since, and it is difficult to ascertain where the blame rests. Mr. Gibson has a good general collection of Japanese, Anemones, reflexed and all the other sections provided for at shows, and we shall hope to see some of his productions at distant exhibitions before the season is over.

AT WARREN HOUSE GARDENS.

THE genial Honorary Secretary of the Kingston Chrysanthemum Society, Mr. Woodgate, amidst the multifarious duties attendant on an extensive charge, manages to grow some 400 Chrysanthemums, and to produce blooms of high exhibition quality. This year his plants are in very satisfactory condition, slightly late, but the buds are expanding "kindly," and a large proportion may be expected to reach full exhibition size and quality, though perhaps somewhat late for the principal metropolitan shows. Taking the majority of the plants, there is quite a fortnight's difference between the Morden Park and Warren House plants, though the gardens are situated only a few miles apart in the same county. The collection comprises, beside the standard old varieties, a good number of the recent introductions and novelties, but it is somewhat early to pronounce respecting their merits. One point is noticeable—namely, that Mr. Woodgate has not attempted to restrict the naturally tall-growing varieties, for some plants are 9 and 10 feet high, but after rather nervously climbing a ladder and inspecting their summits, we found what is very often found on these giants, very substantial, fat, and promising buds of prize-winning capabilities.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 23RD.

A SMALL space in the Drill Hall at Westminster sufficed for the exhibits on Tuesday last, Chrysanthemum blooms and a few new plants being all that was shown of any consequence.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair, and Messrs. P. Crowley, G. W. Cummins, R. D. Blackmore, J. Willard, J. Smith, W. Denning, J. Cheal, P. Barr, and W. Marshall.

Mr. Crook, Farnborough Grange, exhibited fifteen dishes of Apples, Pears, and Plums, including some fine fruits of Blenheim Pippin and Alfriston Apples, Duchesse d'Angoulême, Doyenné du Comice, and Pitmaston Duchess Pears. The Pears were from trees trained to walls, and all indicated good culture (vote of thanks). Messrs. J. Carter and Co., High Holborn, showed a basket of Stachys tuberifera tubers, and the Committee requested that specimens be sent for cooking to be tested at the next meeting. Mr. Smythe, The Gardens, Basing Park, Alton, sent two varieties of black Grapes, one of which the Committee desires to see again. Mr. Smith, Mentmore Gardens, Leighton Buzzard, showed specimens of Prune, Worcestershire, Shropshire, or Cheshire and Farleigh or Crittenden Damsons. Captain Ferry, The Shrublands, Hersham, Walton-on-Thames, exhibited a dish of Duchess's Favourite Apples very highly coloured (vote of thanks).

From the Royal Gardens, Kew, came fruits of the Tree Tomato (Cyphomandra betacea), like small Egg Fruits, of a deep red, and Trichosanthes anguina, (the Snake Gourd), with long narrow bright red fruits. Mr. A. Selby, Radcliff-on-Trent, Notts, exhibited fine tubers of Sutton's Abundance, Reading Giant, and Satisfaction Potatoes (vote of thanks). Mr. W. Ellington, Mildenhall, Suffolk, sent tubers of a new Potato named Market Favourite, a seedling from Vicar of Laleham crossed with Schoolmaster, white, with a purple tinge and eyes. It is to be tried at Chiswick.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. Shirley Hibberd, W. Goldring, H. Herbst, J. Bates, W. Holmes, R. Dean, C. Pilcher, J. Dominy, H. Ballantine, H. M. Pollett, J. O'Brien, W. Wilks, E. Hill, T. Baines, G. Duffield, and John Fraser.

Mr. W. Holmes, Hackney, sent a stand of new Chrysanthemums comprising M. C. Sachet and Sunflower, certificated as Japanese, a distinct Japanese Anemone named Nelson of a deep purplish crimson colour, and broad recurving guard florets, and a yellow variety of the same type named Sabine. Mr. Holmes also had two baskets of October-flowering Chrysanthemums, Feu de Bengale being awarded a vote of thanks. Mr. G. Stevens, Putney, showed blooms of the pure white Japanese C. Wagstaff (vote of thanks). Messrs. J. R. Pearson & Son, Chilwell, were awarded a vote of thanks for several blooms of Chrysanthemums, mostly Japanese, including Othello, C. Delmas, Charlotte de Montcabrier, Madame Louise Leroy, and Capucine, a new October-flowering variety with bright orange yellow blooms freely produced, which was commended as an early decorative variety. Mr. R. Owen, Maidenhead, exhibited a stand of eight new Japanese varieties, for two of which first-class certificates were awarded. The others were Comte Horace de Choiseul, white; Miss Burgess, quilled, rosy mauve; Thomas Stevens, blush, drooping; Madame C. Souchet, straight purplish florets, tipped white; M. C. Souchet, reddish, recurving, reverse golden; and Bocacce, single, purple and white. Mr. H. Jackson, gardener to S. A. Ralli, Esq., Cleveland House, Thornton Road, Clapham Park, sent a branch of Lapageria alba bearing, on a length of about 9 inches, fifteen blush-tinted flowers (vote of thanks).

Messrs. J. Veitch & Sons, Chelsea, exhibited several novelties, comprising Alocasia Chantrieri with metallic-like leaves and silver veins, Rhododendron Brunette, a cross from R. javanicum and Princess Frederica, with large buff flowers having six or seven segments (vote of thanks). G. F. Wilson, Esq., F.R.S., Weybridge, showed flowers of the double Colchicum which had stood the frost, and flowers of a white Primula capitata. J. A. Whittard, Esq, Rydal Mount, Streatham Hill (gardener Mr. H. Wright) sent a sporeling form somewhat of the Adiantum cuneatum style with small pinnules, strong but graceful (vote of thanks). G. H. Baxter, Esq., Hutton Park, Brentwood (gardener Mr. E. Crook) exhibited a plant of Odontoglossum Insleayi splendens of very rich colour (vote of thanks). Messrs. Seeger & Tropp, East Dulwich, showed a plant of Cypripedium Seegerianum, described as a hybrid between C. Spicerianum and C. Harrisianum, the dorsal sepal white, tinged purple at the base (vote of thanks).

CERTIFICATED PLANTS.

Cattleya Harrisi (Baron Schröder).—A cross between C. Mendeli and C. Leopoldi, a most beautiful production and presenting an interesting combination of the characters distinguishing the two species named. The sepals and petals are of semi-transparent texture faintly but

evenly suffused with purple, the lip having a central rich crimson lobe, the side lobes white tipped crimson. Powerfully fragrant.

Cattleya Lamberhurst Hybrid (Baron Schröder).—A cross between C. intermedia and C. citrina, one of the most interesting hybrids yet obtained; the flowers drooping with narrow sepals and petals, white, faintly blush tinted, the lip with a narrow tube and central purplish lobe, very fragrant. The pseudo-bulbs are somewhat like C. citrina, but more elongated, and bearing the flowers at the apex. Very fragrant, but distinct from C. citrina.

Oneidium Mantini (J. Veitch & Sons and G. H. Baxter, Esq., Hutton Park, Brentwood). — A supposed natural hybrid between O. Forbesi and O. Marshallianum; the flowers of good size and shape, the sepals and petals reddish brown on yellow, the lip broad, spotted brown on yellow.

Rhododendron Yellow Perfection (J. Veitch & Sons).—A cross between R. Teysmanni and R. Lord Wolseley, the flowers 3 inches in diameter, the lobes round and broad.

Chrysanthemum Sunflower (W. Holmes).—A Japanese variety of great merit; the blooms large, the florets long and drooping in the way of Belle Paule, but of a rich golden hue.

Chrysanthemum Lincoln's Inn (W. Holmes and R. Owen).—A medium-sized Japanese variety, with reddish fluted drooping or recurving florets, a bright colour, and distinct.

Chrysanthemum Magicienne (R. Owen).—A handsome Japanese with large blooms, slightly recurving florets, of a bronzy red or bright cinnamon hue.

Chrysanthemum Edwin Molyneux (G. Stevens).—This variety is now too well known to need description. It was certificated last year by the National Chrysanthemum Society.



BRIAR v. MANETTI.

In the revived dispute of "Briar *v.* Manetti" I have no intention of taking a share, inasmuch as it must be settled by those who have more varied experience than I, who have never had to deal with any soil but a very stiff clay, where Roses on Briar will, as a rule, live and thrive well, and on Manetti are but ephemeral. But out of this another question arises. I find that sundry varieties, and among them some of the best, notably Marie Baumann, A. K. Williams, and Reynolds Hole, which will not thrive permanently even on the Briar, but die off or go back in two or three years, leaving unsightly gaps in the rows, a matter of some importance to those who wish to keep down the nurseryman's bill, and who do not find it quite so easy to bud dwarfs as it was twenty or thirty years ago.

There may, however, be a stock not yet developed on which these, and others like them, will permanently thrive. At present 99 per cent. of Roses are budded on the two orthodox stocks, and the other 1 per cent. on Grifferaie or other fancy stocks. It is much to be wished that some one with time and space to spare would experimentalise on various new stocks and give the world the result of his experience. It seems, for instance, as if John Hopper would be a good stock, strong, clean-growing, and not much given to send out base shoots. I would try it myself if I had the Rose on its own roots.

One more question I would suggest for discussion in your columns. Has not the time come for a formal divorce in Rose shows between H.P.'s and Teas? They used to be shown together, then the Teas got classes to themselves, and were still allowed to be shown in conjunction with H.P.'s in the general classes. I think myself that they ought now to be relegated to their own special classes and the others have their own boxes to themselves. However beautiful they may be, and no one can admire them more truly than myself, they seem to me, from their very delicacy of colour, out of place among the bolder and more masculine (so to speak) varieties, and we have now a sufficient number of light-coloured Roses among the latter to break the uniformity of reds to which we had to submit some twenty years ago, unless we put in a certain number of varieties inferior in other respects for the sake of lightening up the general effect.—DUCKWING.

ROSE CULTURE.

[By Mr. T. Bones, gardener, Tower House, Chiswick, winner of first prize for an essay on some gardening subject. Prizes offered by Mrs. S. A. Lee, 4, Arlington Park Villas, Chiswick, for competition by members of the Chiswick Gardeners' Mutual Improvement Association, under the age of thirty.]

In selecting a subject I think I cannot do better than give a few practical remarks on the cultivation of the queen of our gardens—the Rose, which justly deserves this proud distinction.

In Rose-growing we have two very important points to consider—namely, soil and situation. The Rose succeeds best in a rich loamy soil of a rather stiff nature, free from stagnant moisture, as it will not flourish long if the ground is badly drained. If draining is required it should be done by laying pipes about 3 feet deep. If the soil is light it may be improved by adding some very stiff loam and night soil that has lain in a heap at least six months, and has had a turning occasionally. This should be worked in when the trenching is done, keeping it well under the surface, as it is injurious to the roots of newly planted trees; if night soil cannot be had cow manure should be used. If the soil is stiff clay a dressing of stable manure and lime would improve it, and be beneficial to the health of the plants. The ground should be ready for planting by the middle of October if possible.

In choosing a situation an open spot should be selected for the beds, so that the plants will have all the benefit of light and air (very important aids to successful cultivation), sheltered from the cold cutting winds, but not overshadowed by trees. In very exposed places shrubs should be planted to break the force of the wind, but they should not be planted too near them, otherwise they will impoverish the soil.

PLANTING.

The best time to plant Hybrid Perpetuals and others of a similar nature is in October and November. If the ground is in proper condition for planting the soil should work clean, so that the roots may not be puddled in the operation. All the large roots should be cut back to about 9 inches to produce fibrous ones. The holes should be about 6 inches to 9 inches deep for standards, but dwarfs require deeper planting; the union with the stock should be about 1 inch below the surface to cause the Rose to throw out its own roots. Make the holes wide enough to allow the roots to be spread out evenly, working in fine soil around them, and making the ground firm by treading it well. The distance apart for standards should be about 2 feet 6 inches to 3 feet, dwarfs should be from 18 inches to 2 feet, according to the sorts. After planting, place a firm stake to those that require it, to prevent the wind blowing them about.

PRUNING.

This must entirely depend on the class to which the plants belong, the growth they make, and whether you want Roses for exhibition or for general purposes; if for the former they should be cut hard back, but for general purposes to four or five eyes. Strong-growing sorts will not require to be cut so hard as weaker ones. If we could be sure that we were not to have any spring frosts, I should say prune your Roses in the autumn; but as we have no warranty concerning the weather, it is preferable to perform that operation in March, so that by the time they begin to make growth the season will have so far advanced that there will be no danger of injury from frost.

PROPAGATION.

The Rose is propagated in various ways—namely, by seeds, cuttings, layers, grafting, and budding. Propagation by seeds is performed with a view of obtaining new sorts. The fruit should remain on the plants until quite ripe. Sow the seed in pans in a compost of loam, leaf soil, and silver sand, covering them to the depth of about half an inch. The pans should then be placed in a cold frame, putting a sheet of glass over them, and covering the same with paper until the seed germinates. As soon as the plants are large enough they should be pricked out, and watering and shading attended to. In October they should be taken up, the tap roots shortened, and replanted in a sheltered spot, from 6 inches to 1 foot apart, according to size.

Cuttings strike freely in autumn and spring, and should be from 6 inches to 1 foot long, consisting of well-ripened wood. If struck out of doors they should be placed on a north border, working in some sand and leaf soil. They should be planted 6 inches deep, treading the soil firmly and afterwards watering it. Cuttings in pots should be placed in a cold frame for about a month, and then in a little bottom heat. When rooted pot singly into 54's, and place in a cold frame until strong enough for planting out in the beds, or potted on as required.

Rose-grafting should be done from January to March. The stocks should be established in small pots, and placed in heat a week before the operation is carried out. The scions should be from 2 inches to 3 inches in length, and consist of well-ripened shoots. Make a diagonal cut in the stock, and the scion must be cut to match, so that the inner bark of both are in contact. Bind the two firmly together with raffia, place in bottom heat, and keep close till the union is completed, when they should be gradually hardened off. All suckers that spring from the stock must be stopped as soon as they appear.

Layering is done by bending down a shoot of the Rose after making a cut right under and beyond a bud, the cut part being pegged down about 1 inch underground, inserting a piece of crock in the cut to keep it open; give water as required. In due time roots will be emitted from the severed bud, and the branch, when cut away with the newly formed roots, will be an independent plant. Midsummer is the best time for this business, when the Rose is in full growth.

Rose-budding is an art which is much easier to perform than describe, but is no doubt the best method of propagation in this case. The stock generally used is the Dog Rose for standards and half-standards. They are got from hedges in autumn. For dwarfs the seedling Briar is much used. The stocks should be planted in suitable soil, 1 foot apart in the rows and 3 feet asunder. As soon as the buds begin to push in spring they should be rubbed off with the exception of two or three nearest the top. If they are strong the budding should be done in July. When the wood is in proper condition select strong buds of half-ripened wood, of the sorts you wish to propagate; these should be kept moist in damp moss. Make a slit in the bark, then loosen the sides with the handle of the knife; cut your bud, and carefully remove the wood inside. See that you do not take out the heart of the bud with the wood, and do not bruise the inner bark. Insert the bud as quickly as possible, tying it in firmly. When the buds begin to move attention

must be given to loosening the ties as required. When the shoots have made growth they shou'd be secured to something to support them, or the wind will blow them out, and your labour will be in vain.

(To be continued.)

THE NATIONAL AURICULA AND THE NATIONAL CARNATION AND PICOTEE SOCIETIES.

(Southern Section.)

The annual meeting of the members of these Societies took place in the room of the Horticultural Club, "Hotel Windsor," Victoria Street, Westminster, on the 23rd inst., the Rev. H. H. D'Ombrain (Chairman of the Committee) presiding; there being also present—Messrs. S. Hibberd (Treasurer), J. Douglas (Secretary), H. Turner, R. Dean, T. E. Henwood, J. Lakin, &c. The notice convening the meeting and the minutes of previous meeting having been read, the accounts were presented by the Treasurer, as follows:—National Auricula Society—Receipts, including subscriptions, £51 0s. 6d., and balance in hand, £33—£91 12s.; and expenditure, including £61 12s. 6d. prize money, £73 14s. 9d.; leaving a balance in favour of the Treasurer of £17 17s. 4d. National Carnation and Picotee Society—Receipts (including balance in hand, £11 6s., and subscriptions, £39 18s. 6d.)—£59 7s. Expenditure (including prize money, £39 18s. 6d) £52 3s. 2d.; leaving a balance in hand of £7 3s. 10d. It should be stated, as attesting to the healthy financial position of both Societies, that no part of the £30 usually given by the Royal Horticultural Society was forthcoming during 1888.

The accounts were remitted to the auditors, and it was agreed that the financial year should for the future close on September 29th. The Chairman was requested to send a letter of condolence to Mrs. Whitbourn on the death of her husband, the late President of the National Auricula Society. Mr. Shirley Hibberd was elected President; Dr. Hogg, Dr. Masters, Mr. J. T. D. Llewelyn, and Mr. Harry Veitch Vice-Presidents. Mr. T. E. Henwood was elected Treasurer in the place of Mr. S. Hibberd, and the Committee for the ensuing year consists of Messrs. H. Cannell, E. Hill, J. James, R. Dean, C. Phillips, G. Wheelwright, W. L. Walker, H. Turner, and T. S. Ware, the Rev. H. H. D'Ombrain being Chairman. In the case of the National Carnation and Picotee Society, the President and Vice-Presidents were elected. The names of Messrs. J. Fraser, J. Laing, and B. S. Williams were removed from the Committee, and those of Messrs. W. L. Walker, J. Lakin, and H. W. Headland added. Mr. T. E. Henwood was appointed Treasurer of this Society also, and Mr. J. Douglas Secretary of both. The question of appointing the judges was referred to the Committee. In reference to the place of exhibition in 1889, it was thought advisable that the Directors of the Crystal Palace should be approached to see if they would be willing to provide accommodation for the shows in 1889, and also make a donation to the funds, and the Rev. H. H. D'Ombrain and Mr. S. Hibberd were appointed a deputation for that purpose.

CATERPILLARS AND BIRDS.

In the article quoted on page 343 of the Journal on caterpillars in the past season, the writer says he considers it a mistake to attribute the increase of these pests to the destruction of sparrows by farmers' clubs, &c., and in this most persons who have studied the subject will probably agree. Several articles and paragraphs in favour of sparrows have appeared in country newspapers, some of a merely sentimental type, others showing considerable ignorance, such as calling sparrows insectivorous birds, and others, of a more plausible character, adducing the evidence of ornithologists, and asserting that the balance of Nature is impaired with the usual evil results by the destruction of sparrows. It is true that some ornithologists, and among them, I believe, Yarrell, who is considered a standard authority, have declared that sparrows do more good by destroying insects during the breeding season than harm at other times, but it seems doubtful if their statistics and experiments were exhaustive. The opinion of Miss Ormerod, the acknowledged authority upon insects destructive to agriculture and vegetation, will probably carry more weight in these days, and she has declared, I believe, emphatically against the sparrow. It is true, too, that if man seriously impairs the balance of Nature he will probably suffer for it; but the fact is that the balance has been destroyed in favour of sparrows, who have been artificially (though unintentionally) fed and protected by man. For by building houses and barns we furnish them with safe nesting places, and by feeding animals, poultry, &c., in open troughs and on the ground, we provide them with special food in the winter, and thus ourselves contribute to their undue increase. The theory that we should not interfere with the balance of Nature, though true in the main, may be carried too far. I was once told it was a mistake to destroy the grubs upon my Roses, as they would thin the buds for me. True, perhaps, but still I thought I would like to do the thinning myself. A well-known nurseryman once employed some women to disbud his Roses for him in view of the shows. They worked zealously, and their employer found, when he came to inspect the plants operated on, that they had cleared off every bud. I fear that caterpillars would be found to be even less teachable.

One of the most serious injuries inflicted by sparrows is done indirectly. It is pretty well known that the majority of insects are winged in the perfect state and celebrate their nuptials in the air, and the birds especially designed by Providence to keep down insects by destroying them in the perfect state in the air before the female has laid her eggs are swallows and martins. The latter, however, finds an implacable foe in the sparrow, who ousts her from her mud-built nest and takes possession of it himself. The rows of martins' nests under the cottage eaves which used to be so common are now almost unknown in some districts, and there seems little doubt that in those places the sparrows will soon extirpate the martins if they have not done so already.

Being fond of birds, I have always been ready to believe all good qualities attributed to them, and accordingly when some years ago a pair of blue tomtits hatched a numerous brood of young in the crevice of a wall which partly enclosed a quarter of an acre of Roses, I thought I should have some real assistance in keeping down caterpillars among the Roses during the month of May; but though I spent several half-hours in watching the old birds feeding their young they never once, as far as I could see, went into the Rose trees, where caterpillars and grubs abounded, in search of food, but always up into the large Beech and forest trees, and I was obliged to conclude that, as far as Roses were concerned, tomtits were a fraud.

It is asserted that sparrows feed their young on caterpillars (they may do so in the early summer when they get nothing better), but it is my belief that they would prefer first anything in the way of fruit or grain, even corn in "the milk," and next perfect insects of any sort. I should say that no bird, except perhaps a cuckoo, would regularly eat caterpillars, which in that stage appear to have ichneumon flies and other predatory insects as their natural foes. Fowls will not touch them, even the omnivorous duck will not have them.

To keep injurious insects in due restraint it is evidently more important that they should be destroyed in the perfect state than as grubs or caterpillars, and therefore, remembering their enmity to the martins as well as their own many grievous misdeeds, farmers and gardeners will probably do well to wage war against sparrows, till at all events their numbers be reduced to a more reasonable level.—W. R. Raillem.



FRUIT FORCING.

Figs.—*Early-forced Trees in Pots.*—Trees intended for this purpose should, if they have been placed in the open air, be taken under cover to protect them from the cold autumn rains. It is presumed that they have been repotted, or had the drainage rectified, as advised in a former calendar. Place the trees in a rather dry, well-ventilated house. Any thinning or shortening crowded attenuated growths must be attended to, and the trees dressed with an insecticide after washing thoroughly in every part with a solution of softsoap, 8 ozs. to the gallon of tepid water, applying with a brush, which must be sufficiently stiff to dislodge scale if there be any, and it must be used judiciously as well as efficiently. A dish of forced Figs is now considered a necessity in large establishments, and is not by any means difficult to obtain. A light well-ventilated house is necessary, having pits containing fermenting materials to afford bottom heat to stimulate the roots and afford a constant supply of nutritive matter. The Fig requires abundance of liquid manure when growing, the trees being most prolific under limited root space. One of the great advantages of Fig culture in pots is the number of varieties that may be grown in a house of moderate dimensions, and which, if forced, come in at a time when the dessert is not too varied. Brown Turkey is unquestionably the best of all Figs for every purpose, a fitting companion being White Marseilles, they, with the following, being well suited for forcing and pot culture:—Early Violet, Black Ischia, Brown Ischia, Black Marseilles, Violette de Bordeaux, Negro Largo, Angelique, White Ischia, Col di Signora Bianca, and Royal Vineyard.

Planted-out Figs.—Figs that have been in bearing since middle June are now commencing to rest, and may be divested of the old foliage as soon as it parts freely from the wood. If planted in inside borders and the growth is considered too strong, the present is a favourable time for root-pruning, an operation that can scarcely be overdone, particularly where the space is limited. All inert soil should be cleared away, strong roots cut out, and the drainage examined. The young roots may then be relaid in fresh compost, firmly rammed, mulched, and left dry until the time arrives for forcing. The young

shoots that have been allowed to grow up to the glass will be thickly studded with embryo fruits, which must be protected from injury when the trees, &c., are cleaned, as well as from the effects of sudden and severe frosts, by being unfastened and drawn down below the trellis until the time arrives for thinning out the branches that have reached the extremity of the trellis. The best soil for Figs is a good friable loam with a liberal addition of lime rubble, broken bricks, and steamed bonemeal. Stimulants, in the form of solid manure or liquid, should always be applied to the surface when the trees are growing.

Late Trees.—Have all root-pruning finished, bearing in mind that strong-growing varieties, when confined to limited root space, can only be kept fruitful and manageable by limiting the rooting area and feeding when carrying heavy crops of fruit. The houses should then be freely ventilated, especially at night, except when frosts prevail.

STRAWBERRIES IN POTS.—Much of the successs in Strawberry forcing depends on the treatment the plants are subjected to at what is commonly known as the resting period prior to forcing. The wintering of Strawberries in pots by stacking them one upon another in sawdust or other material against a wall, or housing them on the borders of fruit houses, is not only unnecessary but absolutely injurious, as the soil not infrequently becomes dry, and the dry atmosphere induced by the free ventilation wastes the energies of the plants. Plants that have had the crowns thinned in the season, the side shoots removed and kept to one crown, will have them well developed, having made their growth early, and have the pots filled with healthy roots. If intended for early forcing they will be the better for having lights placed over them, the pots being plunged in ashes or cocoa-nut fibre refuse, or even tree leaves, but not so thick as to heat, but the lights must be withdrawn in mild weather, and only used in case of heavy rains, when they must be tilted, or in case of frost. They should be regularly supplied with water at the roots, as the Strawberry never suffers so much as when allowed to become dry at the roots. Place late plants in a raised bed or plunged in ashes or other material on the flat in a sunny position to finish the ripening process, and they will require to be well supplied with water. Sun and sharp winds ripen the growths and solidify the crowns far better than the atmosphere of houses.

Autumn fruiting plants require a steady night temperature of 55° to 60°, and 10° to 15° rise by day; ventilate freely so as to prevent the condensation of moisture on the fruit, as that will cause its speedy decay.

PLANT HOUSES.

The Stove.—The temperature of this structure should now range at night from 60° to 65° according to external conditions, while the day temperature by sun heat may range 10° to 15° higher. The day temperature by fire heat, when necessary to apply it, should not exceed 70°. Considerably less moisture will be needed from the present time, and judgment must be used in syringing. On fine days syringing may still be done twice, while on all damp dull occasions it must be dispensed with, only damping between the pots. When syringing, however, do it liberally, in order to keep Crotons and similar plants free from red spider and thrips. Shading will no longer be needed, for all plants in this structure will now bear full sunshine without injury. If Phalænopses or Orchids of a similar nature that cannot bear strong sunshine are suspended in this structure they will still need a little shade, but these can be protected by sheets of light paper without interfering with the other occupants of the house.

Crotons.—All well-grown highly coloured young plants in 5 to 10-inch pots that have been specially grown for room and table decoration should still be kept in a lower temperature than the stove. To excite fresh growth now would spoil them for the purpose for which they have been prepared. It is impossible to colour any foliage that may be made after the present time. Keep them in a night temperature of 55°, and ventilate on sunny days to prevent the temperature rising above 75°. Do not subject the plants to cold draughts, rather allow the temperature to run up 10° higher.

Dracænas.—Plants of the D. Cooperi and D. terminalis types are much better under similar conditions to those advised for Crotons than in a close moist atmosphere, that is, when they are required for the various forms of room ornamentation. They last in good condition nearly double the length of time. Plants of Goldieana should not be starved, for they are liable to lose the brightness they would otherwise possess, while D. Lindeni will bear the treatment advised for D. Cooperi without injury.

THE BEE-KEEPER.

BEES AND THEIR ENEMIES.

BEES have numerous enemies, but few have the power to annihilate them. The elements and man are perhaps the two greatest they have to contend with. The former can, to a great extent, be combated, and evils arising therefrom be avoided with a little care; but, alas! the manipulation they are subjected to! Often a floor has been provided. There will be little damp inside the hive, but where not there will be dirt, and the health of the bees jeopardised. We have never observed anyone but ourselves warning against this evil. The time to remedy it is not, as yet, too late. All those who have been trying the injudicious rapid feeding lately should make an examination of the interior of their hives, and if damp, change the frames and bees to a warm and dry hive. Where that cannot be done change the floor-board. Damp during winter is the bane of bee-keeping, but dryness is the sure way to success.

There can be no better lesson than either to see an apiary properly prepared for the winter, or to have an accurate description of one. As usual I have parted with my surplus bees to persons in want of such. My stocks for the winter comprise small nuclei and strong stocks in equal numbers. With one exception all are prepared as stated in the number of October the 18th, and supplied with plenty of honey that will last them till next summer, and as they have gathered much pollen this fine October, are in a fit state to stand the winter and come out strong in spring, although my nuclei, as usual, are weak in bees.

One of my hives had an imported Carniolian introduced a month ago. It had then been queenless for some time, and had dwindled down to less than a teacupful of bees, but the persecuted drones from the other hives previously mentioned as being queenless or having unfertilised queens, took shelter in this hive, enabling it to put in a good patch of brood that when hatched will greatly benefit it, and I expect it will survive the winter. It is rather singular to see one hive in direct need of drones, yet the bees turning them out, while another having a fertile queen retaining them. The only use they are now is to assist in hatching the brood, which without them could not be accomplished. To-day while I write is the twenty-seventh day since the introduction of the queen and the first attempt to kill the drones. As the brood hatches they will be turned out. I may, before closing this article, state that while it is unadvisible with any variety of bee to change their site or appearance, Carniolians are very sensitive to any change being made either of site or of hive. It is therefore important not to make the slightest alteration or change now with Carniolian bee hives; no variety clings to a position taken up like them.—A LANARKSHIRE BEE-KEEPER.

BIRDS AND BEES.

I AM surprised that any bee-keepers should have doubted that martins as well as swallows and sparrows are most destructive to bees. From my own observation I should say there is not a pin to choose between them, though sparrows are far the boldest. The other day I saw an old cock sparrow catch five bees on the wing in two minutes; he sat on the top of the hive and pounced at them as they came home, but I have never seen them eat drones. When the ground was covered with the dead and dying the sparrows carefully picked out live workers, while the swallows and martins (chiefly the former) scud after the bees as they come home before a shower, and catch hundreds on the wing, and when a swarm has turned out they will fly backwards and forwards through the cloud of bees. I have seen this times out of number.—W. E. BURKITT, *Buttermere Rectory.*

TRADE CATALOGUES RECEIVED.

James Cocker & Sons, Aberdeen.—*Catalogues of Roses, Trees, Herbaceous Plants, &c.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Addresses (*S. Bacchus*).—Write to Mr. E. Molyneux, Swanmore Gardens, Bishop's Waltham, Hants. (*J. C.*).—Mr. W. Collins, Martinhoe, Terrace, Martindale Road, Clapham Park, London, S.W.

New Grape.—Will the correspondent who sent us a new white Grape oblige by writing us again, giving his name and postal address?

Chrysanthemums (*Berwickshire*).—You had better arrange the plants in a light house at once, and carry out the proposals in your letter, which only arrived just in time for this brief reply.

Royal Horticultural Society (*W. T.*).—We have had pleasure in sending your letter to the Secretary of the Royal Horticultural Society, who will no doubt advise you on the matter.

New Varieties of Potatoes (*Tester*).—We have received your letter, and shall be glad to hear if you have any particular objection to our appending your name to it if printed. There has evidently been a mistake somewhere. The question is where? Is it not better to find out where the fault lies before pronouncing condemnation?

White Clove (*D. W.*).—It is the habit of this variety to split at the calyx; but it has done so to a very large extent this season, due undoubtedly to the wet season. From the description you give we should say you have the true variety. We do not know of one better suited for outdoor culture if you have the variety known as The Bride. It is free, a strong grower, and yields flowers abundantly.

Propagating Early-flowering Chrysanthemums (*F. Partridge*).—It is singular the last winter should have killed all your old plants in Cornwall. Every one of ours passed through it safely in a garden near London. As you say there are plenty of cuttings at the base of your plants now, by all means strike some of them in a close cool frame, leaving them there through the winter. If you do not take the cuttings now they will perhaps be killed. You can strike more in spring if you wish by taking the tops off the young plants and rooting them in gentle heat.

Grapes Scalding (*W. Simpson*).—You ask if we will insert your communication. We shall have great pleasure in doing so, also one we have in hand from Mr. W. Bardney, as soon as possible. The great pressure on our columns just now is only temporary. The subject of Grapes scalding is neither exhausted nor settled. We know of houses of Lady Downe's Grapes in which scalding is practically unknown; also a house of Black Hamburghs in which it was not possible to prevent the fruit of one Vine scalding by any method of ventilation, while not one injured berry was seen on the other Vines in the same house. Can those of our correspondents who feel their mastery of the subject solve the problem in that case?

Petroleum and Tomato Houses (*F. W.*).—We do not think the ordinary petroleum would do; it is very volatile, and would answer the purpose only as long as the oil would last. We should not advise you to paint the woodwork of the houses with lime and petroleum. The latter would not add much to the adhering properties of the former. Paint the houses with pure petroleum for the fly, and then paint the woodwork with good white lead and boiled linseed oil, with a very little turpentine intermixed with much of the latter, or it will destroy the lead and be no better on your houses than ordinary whitewash. If painted every year with petroleum it would certainly prevent a large amount of moisture penetrating the wood, but we should prefer the paint.

Marechal Niel Rose (*C. H. S.*).—Your plant was cankered, the fate of thousands, and a disease this variety is very subject to. When growth has ceased remove the side shoots and the unripe end of the main shoot, and it possibly will flower in the spring if the wood is sufficiently ripened. If well ripened it may show flowers from most of the buds along the shoot; if so, remove a portion of the flowers, and only allow the plant to develope a certain number, say a dozen to a dozen and a half. After the plant has flowered prune it well and encourage it to make strong growths again from the base of this season's growth. Train them sufficiently far apart, so that they will have a good chance to ripen. Top-dress or mulch with manure the border containing the roots if you think it needs assistance.

Rhododendrons in Shade (*W. H. M.*).—We have seen Rhododendrons flower very well, but not with equal freedom every year, in shaded places in the south, but we are not able to give an assurance that they would do so in a sunless border in your northerly district. There would be no difficulty in procuring some that would flower freely the first year, but whether they would ripen their growth and set buds for flowering the following season is doubtful. Your not distant neighbour, Mr. William Thomson of Clovenfords, is competent to advise on the matter, and we feel sure he would do so if requested. If you decide to make the experiment, and will either state the number of shrubs you would like to plant or give the dimensions of the border, we will name some free-flowering varieties of compact habit, as we suspect you have not room for strong growers.

Tomato Plants Diseased (*H. R. S.*).—The leaves sent are infested with the fungus so fatal to these plants, and is similar to the dreaded Potato disease, for which a cure is practically hopeless, therefore efforts should be directed against the spread of the disease. All tissue or parts of the plants attacked should be burned. Damp and confined air favour the fungi, hence gentle heat to cause a circulation of air and rather free ventilation should be afforded. A firm soil, and not too rich, so as to insure a sturdy growth, thoroughly solidified by full exposure of the foliage to light and air, and old mortar rubbish or road scrapings may be mixed with the soil in view of strengthening the plants, and so render them better able to resist the disease. Care should be taken to remove every particle of soil in which the plants are grown, not using it again; indeed it should be burned, and seed saved only from perfectly healthy plants.

Pipes for a Cucumber House (*G. R.*).—We advise you to use the same sized pipes for the mains as are used for the flow pipe in the house with which you wish to connect your pipes for your new structure. The quantity of piping required depends upon the height of the house, which you fail to give, as well as the length and width; also whether you want Cucumbers early in the season or through the winter. For winter or early work it would be necessary to have four 4-inch pipes the whole length of the house—that is, two down the centre, one on each side of the path; the other two, one on each side of the house near the outer walls, or between the outer walls and the wall intended for supporting the bed in which you will plant the Cucumbers. To do this two extra walls for forming the beds independent of the outer walls would be necessary. The soil in the beds could be kept many degrees warmer than if it came in contact with the outer walls. The extra walls are not necessary for planting early in April. You would also need two 4-inch pipes for bottom heat, one for each bed, which you should be careful not to bury too deeply.

Celery Decaying (*James Percival*).—It is indeed unfortunate that "thousands of plants" should decay at the neck as in the examples you have sent. You say the "plants were good when placed in the trenches early in June, and they never grew afterwards, the roots appearing to have rotted off." The plants we received were certainly too large for transplanting successfully, and must have been forced on in some way to have attained their size early in June. In that case the check and change would arrest growth at the outset, from which they could scarcely be expected to recover except under the most favourable weather conditions. Constant sprinklings, either artificially or from light and frequent showers, keeping the ground very wet on the surface while it is drier below, are apt to cause decay; but in your case we incline to attribute the cause to the serious check such large plants must have received in removal, and the possible cold and inclement weather following. Some small millipedes were present, but these may have been the result of the decay, not the cause, though when numerous in the soil they often do much injury to plants and crops.

Caterpillars Destroying Cabbages (*Surrey*).—The specimen sent is a caterpillar of Tryphæna pronubo, the great yellow underwing moth, about half-grown. Caterpillars of this species feed upon the roots and underground stems of many plants in the kitchen garden, being discoverable from August until May. They become more or less torpid during winter. It has been recommended to hunt down the moth in its season—viz., July and August, as it moves sluggishly by day, and is conspicuous owing to its yellow "under wings." Frequently it flies to the lights in houses or public buildings. Amongst the Cabbage rows, where the insect is known or suspected to be doing mischief, the application of soot to the roots well dug in has been of proved utility. Some advise the careful application of gaslime which has been kept for a time; but probably the best application at the present time would be a solution of petroleum, half a fluid ounce of the oil being dissolved in a gallon of weak soapsuds, a little of this being poured round the plants; it will not injure them provided they are established. Plants that are being planted should have their roots immersed in a puddle of soot and soil in equal quantities before insertion.

Ham Green Favourite Tomato (*G. A. Crocker*).—We comply with your request in not publishing your letter, but when you say you "wish nothing further printed on the matter" of the above Tomato we must remind you it is grown in a public garden for a public purpose. We have never pretended to say the variety named is the best of all in the house at Chiswick. It is a strong grower and has borne good fruit. The words "apparently a selection from Hathaway's Excelsior" we will alter to "apparently an improvement" on that variety if you like, and both convey a favourable estimate. But all the same, Perfection has afforded the finest fruits that have realised the highest price, while Horsford's Prelude has produced the greatest number of rather too small fruits for market but of excellent quality, and proved decidedly the freest setter of any in the house. An official report will probably be published at the close of the season. We are obliged by the information that "Ham Green Favourite is a *bona fide* cross, though you did not carefully take note of the parents, but know one of them is not Hathaway's Excelsior, as you did not grow it at the time." Perhaps your seedling is a vigorous grandchild of Hathaway's. There is certainly a resemblance between them, but this in no way detracts from the merit of the former.

Grafting Tea Roses (*Ruga*).—Grafting can be done at almost any time provided the stocks and scions are in suitable condition, but is generally delayed until after the turn of the year, as with increased light and heat from natural causes the plants then grow with vigour after the union is complete. Grafting usually commences in January, using wood in a dormant state or nearly so, and the stocks must be in the same condition. It is not necessary that the plants from which scions are taken should have flowered if you are certain that the varieties are true. The greatest success by a beginner would be attained by starting his plants from which the scions are to be taken in heat and the stocks also until the sap has commenced rising freely. The wood of the scion should be nearly half ripe; it should have at any rate a certain amount of solidity. It is not necessary to introduce the stocks into heat as early, the scions producing plants. Still, if you work any in a dormant state you may introduce the two together, and when the sap in both commences flowing grafting can be performed. One eye on

each scion is ample. It will be necessary to have a close frame, the same as you would employ for propagating, to place them in after they are grafted, and if slight bottom heat can be given them all the better. This is especially necessary when moderately young wood is used for scions.

Asparagus plumosus nanus (*J. E.*).—This plant is raised from seed, but we cannot say where seed is obtainable. It is a dwarf plant only in a young state, and these are confined to those that persist in dividing their crowns instead of gaining much strength. Plants of this nature, therefore, are dwarf, but you might grow a hundred plants before one would assume this character. You could easily raise Adiantum cuneatum from spores. It is a light graceful plant, and would look well with Gloxinias. You could not do better than grow Begonia Ingrami, B. Knowsleyana, B. nitida alba, and B. n. rosea, B. semperflorens gigantea carminea, B. parviflora, and B. fuchsioides, which flower well during the winter. You may not be able to obtain seed of all, but for the price of a packet of seed you would be able to buy a plant, and this class of Begonias can be propagated rapidly. If you secure the dwarf strain of Cinerarias you could not have anything much better. You could have plants in 4 to 6-inch pots that would not exceed 6 inches to 1 foot in height with large heads of bloom. Grow Primula obconica. You could grow Celosias, red and yellow, if not too tall. You could grow the red and white forms of Globe Amaranthus and Cyclamen. For that reason the selection is a limited one if the compact habit of Cinerarias does not suit you. There are many plants for flowering at that period that would suit you, but they cannot be obtained from seed.

Odontoglossum vexillarium (*J. P.*).—The foliage of the old pseudo-bulbs will naturally turn yellow, but if the yellow leaf sent is from young growths something is certainly wrong. We think, however, that you need not be alarmed, as the plants have commenced fresh growth, though instead of starting now, the growth should have been well advanced. The temperature of the house should range from the present time throughout the winter from 55° to 60° at night according to external conditions. During mild weather, when the outside thermometer registers from 40° to 45°, the inside temperature may with safety exceed 60°. Under such circumstances the pipes should be kept just warm, even if the temperature rises considerably above the figures given. When the mercury outside falls, say to 35°, then 55° at night should not be exceeded in the house. If the weather prove exceptionally severe, the temperature by morning may be allowed to fall with safety 2° or 3° lower. You have excluded too much light from your plants, and at the same time had the atmosphere too moist and cool. That is the cause of the "spot" on the leaves. Maintain the temperature advised, and be careful not to overwater the plants or have the atmosphere too moist. When water is applied either to the foliage or roots, be careful that it is a few degrees warmer than the temperature of the house. You may have over-ventilated; less air will now be necessary, and cold draughts must be avoided; then, if the plants are kept clean, they will soon grow out of their spotted appearance.

Orchard House Fruit Culture (*B.*).—You had better write to Mr. Rivers, Sawbridgeworth, on the question of books, and we have no doubt you will be able to obtain from him what you desire. Grapes certainly do not pay at the price you name, unless the houses in which they are grown are turned to other account and a fair remuneration obtained from them independent of the yield from the Vines. Hitherto we have been of opinion that Vines paid better to grow at present prices than Peaches and Nectarines, that is, unless the latter are forced early, when they realise a good price and may then pay slightly better than Grapes, although this is very questionable, for good Grapes early in the season realise fair prices. We can readily understand Peaches and Nectarines being scarce and dear a short time ago, for then all the indoor fruit would be over except the latest kinds grown in practically unheated houses. The vineries of which you speak could readily be turned into Peach houses without much labour. The addition to the border and the trees would be the most serious item, and even this depends on the nature of the soil in which the Vines are growing. It is just possible all that would be needed would be a thorough trenching of the border and the addition of manure. If one house was set apart for the trees, the permanent ones could be placed in their right positions with others between them for placing in houses when they attained sufficient size. But this is really a matter for the consideration of those who may have the carrying out of this work.

Improving Cricket Ground (*W.*)—The ground being much "knocked about," it will be necessary to lay fresh turf in the worst parts, patching it with similar turf to that of the ground and so as to keep the same evenness of surface, as "bumpy" ground is highly objectionable. Before interfering with the ground have it well raked over with an iron rake, so as to open the surface, then patch it as advised, and dress at once with short stable manure not too much decomposed, applying at the rate of twenty cartloads per acre. Distribute it evenly and leave it until the first favourable weather after the middle of February, then rake over with a wood rake to still further distribute the manure evenly and removing any littery portions, When the grass begins growing rub well in with the back of a wood rake or bush harrow, remove any rough parts with stones, &c., rolling well down. The rolling should be frequently repeated, and if the grass is kept duly mown and rolled you ought to have a wicket in capital order at the opening of the season. If you cannot procure short stable manure use the shortest farmyard obtainable and comparatively fresh. Avoid old soapy stuff which possesses little manurial value. If the grass be thin sow over it after the ground is cleared and before rolling 8 lbs. Cynosurus cristatus and 4 lbs. Festuca tenuifolia for 1 acre, and if very thin 4 lbs. Festuca tenuifolia. If the grass grows sufficiently vigorous it may only be necessary to apply a dressing of compost, such as decayed vegetable refuse from the rubbish heap, any woody portions being burned or charred. It should be given now.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. C., Havant*).—1, Pitmaston Russet; 2, Pearson's Plate; 3, Nanny; 4, Catillac; 5, Doyenné du Comice. (*J. C. M.*).—1, Hanwell Souring; 2, Red Calville; 3, Winter Greening; 4, not known. (*Lee, Kent*).—Pears too much decayed. (*T. C. Price*).—1, Cellini. The others not known, probably orchard seedlings. (*A. L.*).—1, Marie Louise d'Uccle; 2, White Doyenné; 3, Van Mons Leon Leclerc; 4, Beurré d'Amanlis; 5, Beurré Langelier; 6, Brougham. (*D. H.*).—1, King of the Pippins; 2, Yorkshire Greening; 3, Golden Noble; 4, Kerry Pippin; 5, Pearson's Plate; 6, Northern Greening. (*J. H. H.*).—1, Golden Reinette; 2, Herefordshire Pearmain; 3, Cox's Orange Pippin; 4, Dutch Mignonne; 5, Pine Apple Russet; 6, Dumelow's Seedling. (*T. Cooper*).—1, Bedfordshire Foundling; 2, Alfriston; 3, Minchall Crab; 4, Trumpington; 5, Knight's Monarch. (*J. M.*).—1, Five-crowned Pippin; 2, Alfriston; 3, Striped Beefing; 4, Cox's Orange Pippin; 5, Dutch Mignonne; 6, Catillac. (*H. M.*).—Greenup's Pippin. We have two collections of six Apples each, also two letters, one from "Joseph Harrison" and one from "Lee Kent," but do not know to which collections these names apply. If other fruits are sent they shall have attention.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. R. Drake*).—We shall have great pleasure in naming the plant or shrub if a specimen is sent enabling us to do so, or some particulars given that may assist in its identity. In the absence of these the shrivelled sprays are insufficient for the purpose. (*W. H.*).—Cestrum aurantiacum. (*R. T. Portugal*).—The plant is common Millet (Panicum milliaceum), and no doubt it is the same as you say is used for brooms, as it is grown in America rather extensively.

COVENT GARDEN MARKET.—October 24th.

Our Market is now very quiet, prices remaining much the same all round. Several consignments of Canadian and Nova Scotian Apples have reached us during the past week. Samples indifferent.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Lemons, case	10 0	to 15 0
,, Nova Scotia and Canada, per barrel	10 0	15 0	Oranges, per 100	4 0	9 0
Oberries, ½ sieve	0 0	0 0	Peaches, dozen	2 0	6 0
Cobs, 100 lbs.	70 0	75 0	Pears, dozen	0 9	1 6
Grapes, per lb.	0 6	2 6	Plums, ½-sieve	2 0	4 0
			St. Michael Pines, each	3 0	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 2	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	8 0	14 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	3 0	3 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	3 0	4 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 7
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bunches	3 0	to 6 0	Marguerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	6 0	12 0	Mignonette, 12 bunches	3 0	6 0
Asters, dozen bunches	6 0	12 0	Pansies, 12 bchs	0 0	0 0
,, French, per bunch	1 6	2 6	Pelargoniums, 12 trusses	1 0	1 6
Azalea, 12 sprays	1 0	2 0	,, scarlet, 12 trusses	0 6	0 9
Bouvardias, bunch	0 6	1 0	Pyrethrum, doz. bunches	2 0	4 0
Calceolaria, 12 bunches	0 0	0 0	Roses, Red, 12 blooms	0 6	1 0
Camellias, 12 blooms	3 0	4 0	,, (indoor), dozen	1 0	3 0
Carnations, 12 blooms	1 0	2 0	,, Tea, dozen	2 0	4 0
,, 12 bunches	0 0	0 0	,, yellow	3 0	6 0
Chrysanthemums, 12 bl.	1 0	4 0	Stephanotis, 12 sprays	4 0	6 0
,, 12 bchs.	6 0	12 0	Stocks, 12 bunches	0 0	0 0
Cornflower, 12 bunches	0 0	0 0	Sweet Peas, dozen	0 0	0 0
Cyclamen, dozen blooms	0 4	0 9	Sweet Sultan, 12 bunches	0 0	0 0
Dahlias, 12 bunches	0 0	0 0	Tropæolum, 12 bunches	1 0	2 0
Daisies, 12 bunches	0 0	0 0	Tuberoses, 12 blooms	0 6	1 0
Eucharis, dozen	4 0	6 0	Gladiolus, 12 sprays	3 0	4 0
Gardenias, 12 blooms	1 6	4 0	Violets, 12 bunches	1 6	2 0
Lapageria, 12 blooms	1 0	2 6	,, Parme (French), per bunch	3 6	5 0
Lilium longiflorum, 12 blooms	6 0	9 0	,, dark	1 6	2 6

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to 12	0	Foliage Plants, var., each	2	0	to 10	0
Arbor vitæ (golden) dozen	12	0	24	0	Fuchsia, dozen pots ..	3	0	6	0
Asters, 12 pots..	4	0	9	0	Genista, per dozen ..	6	0	0	0
Begonia, various, per doz.	4	0	9	0	Heliotrope, dozen pots ..	0	0	0	0
Chrysanthemum, doz. ..	4	0	9	0	Ivy Geranium	0	0	0	0
,, large, doz.	15	0	24	0	Lilium, various, doz. pots	12	0	21	0
Coleus, dozen	2	0	4	0	Marguerite Daisy, dozen	6	0	12	0
Erassnia, dozen	0	0	0	0	Mignonette, per dozen ..	4	0	6	0
Cyclamen, dozen pots ..	9	0	18	0	Musk, dozen pots	0	0	0	0
Dracæna terminalis, doz.	30	0	60	0	Myrtles, dozen..	6	0	12	0
,, viridis, dozen..	12	0	24	0	Nasturtiums, per dozen..	0	0	0	0
Euonymus, in var., dozen	6	0	18	0	Palms, in var., each ..	2	6	21	0
Evergreens, in var., dozen	6	0	24	0	Pelargoniums, dozen ..	0	0	0	0
Ferns, in variety, dozen	4	0	18	0	,, scarlet, doz.	3	0	6	0
Ficus elastica, each ..	1	6	7	0	Primula (single), per doz.	4	0	6	0



SHELTER AND FOOD FOR LIVE STOCK.

Shelter, litter, and food are the chief factors to success in the case of live stock in winter. Frequently do we meet with statements of how much exposure animals will bear, but they cannot undergo such exposure without a loss of condition, to say nothing of the suffering involved by it, and it is clearly in the interest of every farmer that we advise close attention to the comfort and health of every animal upon the farm now and onwards during the cold season of the year. A day or two ago, in one of our drives, we saw a herd of cows turned out to graze upon a common. Several of the cows had the whole of one side discoloured by the foulness upon which they had been lying the previous night. We knew by this that the cows had not been well cared for; we were not surprised, for we have repeatedly seen them so ill treated when they are taken into the yards for shelter.

Let us consider what shelter really means. It is a comprehensive term embracing the protection of animals from exposure to anything likely to prove hurtful to them. We build lodges, sheds, and covered yards, and we do well, but we must also insist upon dry bedding and thorough drainage. Never shall we forget the lamentable sight of a herd of choice cattle standing knee deep in litter almost afloat with water at midwinter. This happened, not in the yard of a poor man, but at a home farm replete with every modern appliance and improvement that steward or builder could suggest to a generous enthusiastic landlord. The drains had been suffered to become choked or clogged by the litter, and the poor animals suffered accordingly. Not only must yard and building be well drained, but equal care and attention must be given to the daily clearance of all foul litter, for if cattle are made to lie upon beds covered by dry litter overlying other that is sodden with moisture, they are exposed to a risk of rheumatism which involves suffering, a falling off in condition, and it may be a positive loss. This is just one of those simple matters of detail so often overlooked, yet in which negligence is the cause of much mischief.

Not only to shelter must we look for the warmth necessary to health in winter, but to a wholesome and abundant dietary. The present autumn is remarkable for an abundance of food in the guise of corn, roots, and fodder. The temptation to have full yards of cattle once more is therefore greater—all the greater from the fact of improved prices. But it is now, rather than in spring, that a careful calculation of ways and means should be made. The calculation is simplicity itself. If made by gross weight or measure, a cow or full grown bullock requires about 90 lbs. of dry food daily, or half as much more of green food; a yearling requires about half, and a calf about one-fourth of this quantity. A horse requires from four to eight gallons of corn, according to its work, four gallons of pulped or minced roots, and as much fodder as it can consume weekly. All corn used for horses or cattle should be crushed; if given whole a weak animal cannot digest it, and we have often known Oats to pass through the stomachs of young horses undigested. As we write we are having a large quantity of Barley and Sainfoin straw cut into chaff and mixed for general use during winter among horses and cattle. Horses especially require extra attention in winter. As a rule they should always be fed for two hours before leaving the stable in the morning. We never allow nose-bags to be used, as they are a temptation to a horseman to trust to feeding horses in part with them after the horses leave the stable. For young horse stock we prefer very large loose boxes rather than open yards with sheds in winter. If light can have free admittance there is no better place for them than one end of an old barn to winter in.

Before all things do not overstock the farm for the winter and spring; but too often by midwinter such inroads are made upon the store of food that a reduction is made in the daily quantity, the inevitable result of a falling off in condition in the animals. Any attempt to sell such stock in March involves a certain loss and consequent vexation. In making a calculation of possible requirements, the only safe plan is to provide for a late spring, and this can very well be done without running to the opposite extreme of keeping a superabundance of fodder or roots. If there is a flock (as there ought to be on every farm) we must take into account its special requirements also.

WORK ON THE HOME FARM.

The long spell of fine weather proves most welcome, and is an invaluable boon to every farmer. It enabled us to save the late corn in good condition, and the abundant second growth of Clover and Sainfoin has also been turned to good account. The Sainfoin had plenty of seed upon it; it was mown, and when the stems and leaves were sufficiently faded and dry for our purpose it was carted from the field straight to the threshing machine, the seed threshed out, and then the plant itself was cut up into chaff with an equal quantity of Barley straw. Two days of this chaff-cutting sufficed to fill one end of a barn, a little salt was scattered among it as it was taken in, a slight heating will follow, and we have thus secured a large supply of excellent chaff suitable for horses, cattle, or sheep. On another farm we had two fields of seed Tares, which harvested very slowly after the mowing, and we had the whole of them carted, threshed, and chaffed in the same manner as the Sainfoin. Some late Clover has also been cut into chaff, as we wanted the land cleared to plough it for Wheat. Part of that field of Clover was folded by sheep, but the crop was too heavy for the sheep to clear the whole of it, part had to be mown and the land dressed with farmyard manure. Of course such late crops of forage might be turned to excellent account for silage, but it answered our purpose best to convert it into chaff.

Another important advantage arising from the fine autumn is such a chance as does not often come to us of getting rid of perennial weeds from foul land. Since harvest, late as it was, we have been able to plough foul light land, scarify, harrow, and clear the weeds upon the surface, plough, and repeat the entire process again where it was necessary. Glad indeed have we been to find that many other farmers have turned the fine weather to account in the same way, evidence of which has met us in the couch grass fires which we meet with in every district day after day. We take this as a sign that one of the most important lessons taught farmers by adversity is not to allow weeds to exist and rob the land of the fertility which costs them so much. Depend upon it, if farmers would limit the area of their occupations well within the scope of their means they would soon prosper and thrive again.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. October.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 14	30.154	41.6	37.8	N.	46.7	50.9	35.2	84.6	28.0	—
Monday..... 15	30.358	38.6	36.6	S.W.	45.2	52.2	31.3	66.4	24.9	—
Tuesday 16	30.403	41.8	41.8	S.E.	44.7	56.1	34.6	82.9	30.4	—
Wednesday.. 17	30.321	40.9	40.9	Calm.	45.0	55.4	38.6	74.3	33.4	—
Thursday 18	30.287	38.4	38.4	E.	45.8	54.7	36.3	68.2	32.8	—
Friday 19	30.292	43.2	43.2	N.E.	45.2	54.8	38.3	77.8	33.3	—
Saturday 20	29.381	40.8	38.8	E.	45.0	55.6	33.6	79.2	26.6	—
	30.314	40.8	39.6		45.4	54.2	35.4	76.8	29.9	—

REMARKS.

14th.—A brilliant autumn day.
15th.—Overcast and cold morning; fine afternoon, clear night.
16th.—Foggy till about 11 A.M., then fine and bright. Solar halo in morning.
17th.—Dense fog till 10 A.M., afterwards fine, but rather hazy; foggy at night.
18th.—Foggy till about 11 A.M., then fine, though not clear.
19th.—Slight fog early, bright day and night
20th.—Bright throughout. Lunar halo and pink auroral streamers at 11.40 P.M.

A rainless, cold and dry week, with high barometer, and light easterly winds.—G. J. SYMONS.

THE AUTUMN.

IF, as is often said, and not without some truth, the autumn is the commencement of the gardening year (the season of planting), it will perhaps be conceded that the beginning bas not on the whole been a very bad one. The change from more or less continuous showers that prevailed during what ought to have been summer to settled fine weather at the close has been most welcome, and the generally dry October, with acceptable rain at the end (for the ground is very dry) will leave its mark for good on fields and gardens. The fluctuations of temperature during the month have been extreme—one period representing 14° or 15° below the average, and the term succeeding an equal range above it. The sharp frost of the first few days will long be remembered, for the summer vegetable supply was till then maintained, Peas and Beans being as fresh and plentiful as is often the case in July ; but these and other crops of a tender nature were destroyed in a night, with practically all flowers that were rendering gardens as gay as they had been at any period of the year. Unquestionably great injury was done, aud in not a few cases individual losses were serious. Some growers of Chrysanthemums were taken by surprise, and many plants rendered worthless except for producing cuttings. The late varieties appear to have suffered the most, as might be expected from their being in active growth; the earlier, which had set their buds, were firmer and essentially more frost-resisting. One grower of late blooms for sale estimates his loss at £100 at least, and there must have been others who had not their plants housed that have suffered iu proportion in localities where the frost was severe. The bitterly cold days preceding the destructive frost, however, were not lost on men who were on the alert and had structures ready for the reception of their plants, aud many of these that could not be placed under glass were saved by laying them down and covering with mats at night, placing them in position in the daytime. It does not follow that the plants which apparently recovered from the nipping have not been checked to an extent that will injuriously affect the blooms, and those cultivators who had tbeir plants safely arranged under glass during the last days of September will have the advantage over others who could not, or did not, make them secure at the same time. There can scarcely fail to be many unsymmetrical blooms this year through the effects of frost on the buds, many of which we have seen are not opening kindly, though there are plenty that are for ensuring effective displays during the Chrysanthemum month—November.

But though the frost referred to cut down vegetable crops, killed flowers, and injured certain plants, it is a question if the fine weather succeeding did not afford ample compensation in the beneficial effects it must have had in other important respects. Work in gardens and fields was seriously in arrear at the close of September. Ground was infested with weeds in spite of all efforts to subdue them. The harvest was far from completed, and there were infinitely more Potatoes in the ground than out of it, and the disease spreading. The dry weather gave an enormous impetus to work, and land was cleaned and valuable crops secured. Taking a broad view of the case, most persons will admit that the benefits resulting from the fine term that succeeded the frost greatly overbalanced the harm that was done by it. The dry October has, moreover, been of marked advantage to fruit trees. A month ago they were growing rampantly, and there seemed few signs of the wood ripening, while a late planting season was generally expeeted, and that is of advantage to no one. The frost gave a decided check to growth, and the wood, owing to the dry weather, is in better condition now than at one time could have been anticipated. The favourable circumstances for land-cleaning and preparation have given a great stimulus to planting. Orders for fruit trees and Roses have flowed in freely, and execution has been brisk and planting active. Early defoliation through the effect of the frost has enabled a good early start being made in this work, and it is not improbable that much more of it will be done during the season than has been accomplished in any previous year. That trees will grow when well planted under favourable conditions in spring does not admit of doubt, but it is not the less wise to sieze promptly and turn to the best account autumn advantages.

A wave of activity appears to be passing over the horticultural world. Fruit growers are very much on the alert—those that are established extending their plantations, while "beginners" are more numerous than ever. The information obtained by and through the British Fruit Growers' Association at the Crystal Palace, and at the important National Conference subsequently held at Chiswick, has, by its wide distribution, done much to encourage fruit culture on safe lines, as have good provincial agencies The papers read by practical men who do not dream golden dreams and narrate them to dazzle the multitude and lead the ignorant and confiding astray, will, it is hoped, in some degree counteract the wild rhapsodies that occasionally find their way into newspapers, and which, though not intended to mislead, are calculated to do so. Only men who have won reputations by their work—men of high character aud of wide experience in horticulture, can be regarded as safe guides in this matter. It is most important that seekers for information examine closely into the credentials of those who constitute themselves, as scores do in various parts of the country, guides for the inexperienced. It is easy to err in planting fruit trees, and years may elapse before the initial mistakes are apparent. It is also easy to lead persons to expect much more than can be accomplished. The plain record of facts included in Mr. William Paul's valuable Conference paper (see page 359), is worth infinitely more than all the ear-tickling orations of optimistic doctrinaires. Information on fruit culture for profit to be entirely trustworthy must be founded on accomplished facts, not on fanciful theories. The building up of fortunes from figures is easily done, and as in the past so in the future, the expected El Dorado may only be found on paper. Fruit culture conducted on sound lines is sufficiently profitable to justify a great extension, but it is well not to commence with extravagant anticipations that cannot be fulfilled.

As fruit-tree planting to a greater extent than formerly is a feature of the autumn, so also is the planting of Roses. The favourable weather, we are informed, has induced an unusually brisk demand for plants that are generally very fine and in condition for early removal. If they can be inserted while the earth heat is sufficient for inciting root action before winter the gain is considerable ; but thc temperature of the soil is lower than usual for the season, and will quickly fall to a point at which roots remain dormant, therefore early action iu planting is desirable.

But fruit trees and Roses have only a share of public interest now. The queen of autumn, the Chrysanthemum, will soon be enthroned and thousands will do her homage. At no previous timc were growers of plants and blooms so enthusiastic and admirers of them so numerous. This is the outcome mainly of the formation of societies aud the encouragement they have afforded in stimulating high cultivation. The National Chrysanthemum Society, by the enligbtened policy it has adopted and the enterprise it has exhibited on sound business lines, has won for itself a high position and the confidence of the community of which it is the recognised head. While more than ordinary interest attaches to all the coming shows, the Sheffield Tournament is the great centre of

attraction in November. Northern and southern growers are expected to meet in friendly rivalry; and probably at no time could they have met under more equal conditions, for the summer appears to have been almost alike in cold, cloud, and wet over the entire Chrysanthemum-growing area, with a dry October following everywhere. The results of those conditions remain to be seen, and these will perhaps not show a higher standard of excellence than has been previously established. It is certain the early October frost will be found to have impaired the quality of thousands of blooms, for thousands of buds were exposed to it, and the chief honours may be expected to fall to the wide-awake growers who housed their plants sooner than usual, or during the last week of September.

HARDY PLANTS FOR SPRING FLOWERING.

The early collapse of the summer occupants and the dry time experienced of late has been very favourable for the work of clearing and replanting the beds. It should be remembered that many of the summer bedding plants, as well as the hardy Wallflowers, Forget-me-nots, Silenes, and Saponarias, greatly impoverish the soil, and unless the beds are dressed with fairly rich compost or short manure at least every second year, it soon becomes too poor to cause a healthy growth. In many instances this can better be done now than in the spring or early summer months when so many other matters require attention. The best material for improving the fertility of the soil, and also to otherwise benefit it, will be found in a well-decayed heap of leaves, garden refuse, edgings of turf and lawn grass, which ought to be taken good care of in all gardens. Failing this, substitute either old hotbed manure and soil, or good leaf soil, the last-named being freely used on heavy soils. In refilling the beds, all the plants, shrubs, and Conifers used should be moved as carefully as possible, preserving a good ball of soil about the roots in every case. In order to be effective they ought to nearly or quite touch each other, as few of the plants used make any progress before the spring or flowering time. All should be firmly planted, or otherwise a moderately severe frost will upheave the greater portion of them. Owing to the comparative dryness of the season it may be necessary to water many of the plants and shrubs a few hours prior to removing them, and again after they are replanted.

Many bulbs are available for the decoration of borders and flower beds, and seeing that these can be bought at a cheap rate, and in most instances flower when the ordinary winter bedding plants are still flowerless, no good reason exists for so few, comparatively speaking, being planted. The present is a good time to purchase and plant the majority of those included in the advertised collections, and many beautiful species may also be ordered separately. Whether they shall be planted in beds or in borders where they may remain undisturbed for years, must depend upon circumstances, and no one need hesitate to commence their culture under the impression they are at all difficult to manage and flower.

ANEMONES.

The single varieties sold especially for bedding purposes, notably the showy and early-flowering Anemone fulgens and the Peacock Anemones, are frequently planted in masses or single lines, and are very effective early in the spring. They ought to be covered with about 3 inches of soil, taking care to plant them eyes upwards, and they may be about 6 inches apart each way. Such choice double varieties as the French Chrysanthemum-flowered and the ordinary Double French, as well as numerous choice varieties, ought to be planted as much as possible where they will not be disturbed. They are very suitable for associating with alpine plants in prominent positions, and they are also very serviceable when extensively grown in fruit borders. All merit a rich loamy soil, and if the tubers are planted not less than 3 inches deep and about 9 inches apart each way, they will gradually cover the whole of the ground. Single patches may also be planted and not again disturbed. The tuberous Anemones are all very beautiful in a cut state, and are frequently available when other flowers are scarce.

ALSTRŒMERIAS.

It is useless to plant these in cold damp positions; they succeed best in the comparatively hot and dry borders at the foot of sunny dwelling-house walls. They also thrive admirably on poor well-drained borders, where they spread and flower abundantly. It is necessary to plant them not less than 8 inches deep, and if the position prove favourable—that is to say, is sufficiently dry, no further pains need be taken with them. Simply let them alone.

CHIONODOXA LUCILIÆ.

This charming bulb is more popularly known as the Glory of the Snow, and is closely allied to the Scilla family. Home-grown bulbs are the best, and these may be planted in patches along the front of mixed borders, and are especially attractive among low rockwork plants. No special soil is needed, and they should be planted 4 inches deep and that distance apart, and not to be disturbed for many years.

CROCUSES.

These are suitable for the front lines of flower beds or for mixed borders. If put out 4 inches deep and 3 inches apart in fairly rich soil and not disturbed for several years the bulbs increase rapidly, gradually finding their way nearer to the surface, and every spring present a grand mass of colour. They also succeed fairly well when lifted after the leaves have died, being returned to the ground in the autumn.

CYCLAMEN.

The Europæum and Coum varieties are fairly hardy, but as a rule they are most effective when treated as alpine plants, sheltered rockwork better suiting them than damp and cold flower beds. When in good health both the foliage and flowers are beautiful. Plenty of sharp sand should be mixed with the peaty soil intended for their reception, and a rather shady position best suits them.

ERYTHRONIUM OR DOG'S-TOOTH VIOLET.

This little gem ought to be permanently planted in peaty soil, or in a mixture of fresh loam and leaf soil. They ought to be planted rather thickly, and not less than 2 inches deep, along the fronts of mixed borders, beds, or shrubberies, where they will spread, first the flowers and then the foliage being attractive.

FRITILLARIAS.

The Imperial section are tall growers, and their proper place is near the back of mixed borders. The varieties of F. Meleagris attain a height of 1½ foot, and F. præcox is still more dwarf. A deep rich soil and rather shady position suits them. They are best moved with a little soil about the bulbs, and if about six of these are grouped together a fine mass results in the course of a few years.

HYACINTHS.

These are fine for either flower beds or mixed borders, no class of bulbs being more showy early in the spring. They are most effective when massed in mixed colours, and clumps of one colour are also attractive. A deep and fairly rich loamy soil suits them, and they ought to be covered with 4 inches of soil. If dotted among carpeting plants they may be placed out 12 inches apart, but if massed they ought to be about 8 inches apart each way. The Grape, Feather, and Musk Hyacinths are most effective in clumps along the fronts of mixed borders and ought not often to be disturbed. All are very pretty and worthy of cultivation.

IRISES.

The bulbous rooted Irises are very beautiful, and are suitable either for beds or borders. If planted in patches of about five bulbs and duly marked either winter or summer bedding plants may carpet the ground, and the Irises will be improved by being undisturbed. They require a good loamy soil, and should be planted 4 inches below the surface. The English varieties are the earliest, and the Spanish form a good succession.

NARCISSI AND DAFFODILS.

The choicest of these ought to be planted in patches of three or more bulbs where they will not be disturbed for some time, and every season the clumps will improve in value. Plant not less than 4 inches deep in fairly good soil. Those bedded out may be treated similarly to the Hyacinths.

TULIPS.

The sooner these are planted the better. They require to be treated similarly to Hyacinths, but should be planted more thickly, or from 4 inches to 6 inches apart, according to the variety, the Van Thols being the smallest.

VARIOUS BULBS.

Snowdrops, Leucojums, Scillas, Zephyranthes candida, Winter Aconite, and Triteleia uniflora to be treated similarly to Crocuses, patches in front rows of shrubberries and flower borders being very effective. Snowdrops succeeded admirably planted on lawns, where they spread rapidly. Ornithogalum arabicum should be planted in a sheltered spot, Jonquils treated somewhat similarly to Narcissi, and Hyacinthus candicans be planted in mixed borders and not disturbed. Tigridias to be kept out of the ground till the spring unless a warm dry position can be assigned it. Plant Ranunculus in November and December, and Liliums candidum, auran-

tiacum, and tigrinum at once in good well worked soil, and do not disturb them for several years. Freesias, Ixias, and Sparaxis are suitable for pot culture only.—CULTIVATOR.

PEACH CULTURE.

IN your issue of the 11th inst. you publish a paper by that authority, Mr. T. F. Rivers, on the Peach, and all who are engaged in Peach culture will esteem the valuable information given, but in two sentences I received the impression that the author cast a douche of cold water on the practice of growing Peaches on the open wall.

I admit that where capital can be spent for houses it will prove the most satisfactory. The paper was addressed more to the trade than to private gardens I presume, in its spirit at least, but knowing that many are influenced who may not have sufficient practical knowledge, I would like to say a word in favour of the Peach on the open wall.

Here we have more than 350 feet length of wall, 12 to 14 feet high, covered with Peach trees, and there is no intention of reducing their number. Even in this exceptionally cold season the trees have produced a full crop of useful, but not large, well coloured fruits of good flavour, which have been in constant demand at the table up to this 23rd of October, when the last of the mid-season varieties were gathered. Dr. Hogg is a fine variety with dark green leaves, vigorous, free-bearing, with dark coloured fruits. Royal George is one of the best in every respect; Bellegarde, rather earlier than the above but not so fruitful. Stirling Castle is the largest named, but not so fruitful as the two first. One tree, more than fifty years old, has produced about 200 fruits and did the same last year.

The earliest varieties are not grown here, as the fruit would be ripe before wanted. The latest varieties will not ripen this year, and never do thoroughly, but we grow some of them, as I find Peaches can be grown with more certainty here than almost any other wall fruit, except Apricots, which seldom fail. Sea Eagle is a great bearer in a young state, but should be in a house to finish it; also Prince of Wales, but it is only second rate in flavour.

A portion of the border has been cropped ten months in the year for ten years up to 2½ feet from the wall, and yet gives good crops with heavy manuring. The largest portion of the border is covered with grass within a foot of the wall and 6 feet from it, but we could produce finer fruits if neither crops nor grass were on the borders 8 feet from the wall. I am convinced that large borders are not necessary for growing Peaches. We have a dry bottom on sand and gravel, altitude 180 to 200 feet three miles from the North Sea; mildew is unknown on the Peach trees; large quantities of liquid manure from the midden and guano and soot are applied. Half the wall is protected in the spring with double fishing net when the trees begin to bloom, and kept on to the 20th of May, and for greater security against frost a flued portion is covered with frigi domo in the shape of curtains, and withdrawn by day; but in ordinary seasons the net protection is equal to the latter. Under the above we do not experience blister in the leaves in spring.

A considerable amount of labour is necessary to keep the trees in a healthy condition, especially in the spring, before the fruit is fairly set, so that water can be freely applied. This is a critical time where many trees are ruined. I have often found that the longest is the best way in dealing with that pest the green fly, by washing the young shoots with tobacco liquor or other insecticide with the hand. Cold water must be applied during the summer frequently to keep down insects, and the trees and wall should have a thorough washing with strong insecticide after the leaves have fallen. Rivers' Orange and Pine Apple Nectarines colour beautifully, but Elruge is not sufficiently fruitful. Lord Napier is on trial.—GEORGE HARRIS, *Alnwick Castle Gardens.*

NOTES FROM A HERTS GARDEN.

NOTHING except the uncleared, blackened, or dried remnants remain of summer vegetables. Peas, Dwarf and Runner Beans, with Vegetable Marrows, all tender plants succumbed to the early October frosts. There is not, however, as last year, scarcity of winter edibles. Michaelmas Cauliflower—viz., Walcheren and Veitch's Autumn Giant, are particularly good, and Snow's Winter Broccoli is just beginning to "button." Gilbert's Universal Savoy, which has the quality of spring Cabbage and the flavour of Savoy with a "smack" of Cauliflower thrown in, is superb for table or any purpose, and Drumhead Savoy is valued for size and quality. We have as usual a good batch of Cabbage sprouts. The spring or early summer-cut plants allowed to remain branch and form little Cabbages for late summer and autumn use, besides a quantity of Coleworts. I like to retain some of Ellam's Early Dwarf and Hill's Incomparable of the late autumn or early spring planting for this purpose, as they form heads better the larger sorts. There is, of course, a large breadth of Brussels Sprouts, Exhibition for early use and Paragon, both of Veitch's strain, the first having large heads and the other small, so that quantity and quality tastes are met. Then there are Spinach and roots, which last of all sorts are plentiful and good. Of Celery Sandringham and Early Rose are fine, the former short and thick, the latter twice as long and large—an excellent sort, an early form of Major Clarke's Solid Red with all its good properties, a shy "bolter;" indeed, we have not found one out of some hundred plants of a sowing made early in February, but most unaccountably some of Sandringham have gone astray. Generalities, however, have nothing of special interest, therefore I will particularise.

VEGETABLE MARROWS.—Young small Marrows, about the size of a tennis-ball, under rather than over, are in daily request, a dozen or more at a time, which I have not found any other variety meet so well as Pen-y-byd. This year we have a plant, a natural hybrid perhaps, between it and Moore's Cream, sturdier and hardier, the female Pen-y-byd, with fruits quite as numerous, swelling to double the size in half the time, the male Moore's Cream. Short-jointed Long White resisted the cold and wet well, and when put to straits we substituted it for the small sorts, with the result that it took immensely. Custard did not fruit, and Moore's Cream was most unsatisfactory.

TOMATOES.—Last year, and in most years previously, we had so many fruits from unheated houses and outdoors that we resolved not to waste a heated house over them after June, as we had a supply fully ten months out of the twelve, and much as Tomatoes and Cucumbers at dead winter are talked and written about we never had a house of either that paid a fraction of the "candle." Now we are content to insert cuttings in 4-inch pots in September, strike in heat, and keep close to the glass in a house with a temperature of 55° to 65°, with advance of 10° to 15° from sun heat. We shift the plants into 10-inch pots in December or early January, crocked, a little rough compost is placed over them, and then the plants, one in each pot, placing soil around, rough stuff, with a sprinkling of soot to take off the sickly colour Tomato plants are apt to assume in winter. They are stood at the sides of a small span-roof about 18 inches apart, and are starved—*i.e.*, the atmosphere is kept rather dry, water given only to prevent flagging, and not top-dressed until the first trusses flower. Then soil is added with a little more soot and some manure, and they are no further trouble. Of course, the plants have all laterals removed, the leaflets shortened back, as we want fruit not leaves, and give water as required. We have ripe fruit in April. They fruit until those from seed sown early in the year and treated similarly take up the running and continue it until the others planted out in unheated houses come in, when we clear out and plant with late Melons. The plants in cool houses have grown strongly and fruited insignificantly. They are a failure. Happily we had outdoor plants. We grow Hackwood Park, Acme, Excelsior, and Surpasse. A notable feature of these plants was their extreme vigour. I never saw such stems, leaves, and trusses, the latter resembled ropes of Onions—*i.e.*, those that set fruit. The difficulty was the cold dull weather that prevailed in June, July, and August The leaves were remarkably fleshy, and as the plants were not allowed to produce laterals they pushed viviparous plants from the upper surface at the joints of the foliage, several on a leaf.

Ridge Cucumbers failed to fruit, though we specially threw some Oak and Beech leaves into a ridge quite 20 yards long, 6 yards wide, and 2 yards high for their particular benefit.

BEANS.—Broad Beans did well; Early Mazagan, as usual, stood best, and came in soonest. The small Beans always meet acceptance, whatever may be said of this Bean in other respects. There was unusual luxuriance in the Longpod and Windsor section, and they corned well Veitch's Improved Longpod proved a long way ahead of those in the Longpod section, it being remarkably prolific, and quite as early as the Early Longpod. Improved Windsor is large and fine, none better of its class.

Dwarf or French Beans make a sorry growth. It looked in June as if there were to be no pods, but they came after all by mid-July. Ne Plus Ultra cropped famously; it is the sort both for indoors and outdoors where but one kind is wanted, indeed it has no equal for productiveness and quality. It is also early. As variety tells for something, Negro Mammoth Longpodded may be named as excellent, also Canadian Wonder, both being very prolific and good for general crop.

Of Runner Beans we only had Scarlet Champion, as the giants and Mammoths must, if they are used at all, be sent in small, for cooks have

prejudices as well as other folk. We, however, had a 20 yards row of Chelsea Giant White, which produced truly gigantic pods, thick, fleshy, and best of all of capital table quality. The enormous size of the handsome pods render them very striking on the plant, and still more so when selected for exhibition. I have a fancy for trying things differently at every opportunity, and this year the Runner rows were placed exactly where the Celery rows had been the year before. There were others on ground we manured and dug. Comparison of the two is out of the question, suffice it we had more than double the crop on the well stirred soil of the past Celery trenches as on the dug ground, though we mulched both so as to give an equal chance. Then we had staked and unstaked rows, with the result that for one of the unstaked we have four of the staked—*i.e.*, pods, dishes, or pecks, whichever way it may be put.

Asparagus.—Our soil is strong with a clay subsoil, which is not suitable for Asparagus. Still we have some fairly good beds, and have some better covering on the ridge system, but then it does no more in two seasons than I have had it do in one on sandy soil, deep and rich. To make Asparagus thrive in heavy soil, I find nothing better than the rubbish heap débris, with the woody portion charred, the potting bench refuse, including crocks, helping to make the soil more porous, and leaf soil a foot thick worked in does wonders. Yet it costs more to make the land than will ever be seen again in profit of Asparagus. Growing for home consumption is "a leaf out of another book."

Cauliflowers.—Only twice have I sown Autumn Giant in August, and had a very large per-centage of blind plants each time. They were blind (*i.e.*, lost their centres of growing point) in the frame into which they were pricked, and when transplanted in spring to the flowering quarter many more followed suit. From a spring sowing out of the same packet of seed not one in a hundred was blind, but of the August sown fully 50 per cent. went wrong. I don't pretend to be capable of giving an explanation, but it is clear it does not like checks. Nor am I going to complain, as Autumn Giant is the best of all Cauliflowers for autumn use, not autumn sowing. There is another reason. Out of the blind ones I had a plant that made ample amends by the shortness of its stem, the sturdiness of its habit, the distinctness of its leaves, and the size of its head. Believing in selection, I had it lifted and potted, and it is now going to flower in good earnest. Cauliflowers have been and are first rate. Erfurt Mammoth, Early London, and Walcheren are our sorts for autumn sowing, and for spring also, Walcheren being still a splendid all-round sort, surpassed by none except Veitch's Pearl, which is a great improvement on this popular variety, and from which it is very distinct, with quality of the finest. Grubs at the root and caterpillars have not troubled Cauliflowers, or indeed any of the Brassicas this season.

Cabbages.—July twelvemonth I sowed Veitch's Earliest of All with Ellam's Early Spring, planted at equal breadth, with the result that Earliest of All nearly all bolted, but not one of Ellam's. It was difficult to tell which feeling was ascendant, that of mortification at Earliest of All, or the satisfaction that it was nowhere beside my favourite Ellam's, the best of all spring Cabbage. The reason I have not mentioned it sooner was through my finding the vendors did not put it forward as a spring but as a summer Cabbage, otherwise my pen was ready dipped in poison for the onslaught, and I do not care for summer Cabbages. Hill's Incomparable follows Ellam's, and they are thoroughly reliable and well flavoured as summer Cabbages, which surpass Nonpareil Improved. Of course I have not seen Earliest of All, which may be first rate in its proper season, that certainly not being its characteristic for spring use, besides it is too tender, being much cut by frost, but then I took particular pains with it—viz., gave the ground a good dressing of fowl manure, had splendid plants, which were cut off by frost, and what remained our poultryman had for the fowls.—Utilitarian.

CANKER IN FRUIT TREES.

I have read with interest Mr. Tonks' paper on the above subject, especially as I have for some time been of opinion that canker is due to lack of some needed plant food in the soil, or to a superabundance of some injurious mineral, as I mentioned in the Journal, vol. ii, p. 588, when there was a discussion on the same subject. I think if we were all to contribute what we know on this question we should sooner arrive at an answer to it, and find out exactly what is needed.

I hardly think it can be necessary to supply as a remedy all the ingredients mentioned in Mr. Tonks' formula, because many varieties of fruit trees on my soil are subject to canker, and yet we have sufficient of all he names except soda, and therefore I am inclined to think that if any mineral is required it is this, and it can be supplied very cheaply by an annual dressing of 2 cwt. of salt per acre.

Dr. Voelcker's analysis of my soil, before applying a large quantity of dung, which I had subsequently done, shows that it contains :—

Oxide of Iron.	Carbonate of Lime.	Sulphate of Lime.	Magnesia.	Soda.	Potash.	Phosphoric Acid.	Organic Matter.*
3·38	3·91	0·26	0·67	0·07	0·51	0·24	3·64

He remarks that the soil contains a considerable proportion of lime, and will not need an application of this at all, and the quantities of phosphoric acid and potash are also fully up to the average of good fruit-growing sorts.

As the fruit of the Apple contains a large proportion of soda, and our soil contains a great deficiency of this, and has sufficient of other minerals, it points to the conclusion that if canker is due to the lack of any particular mineral, in all probability it is soda that is required, besides keeping up the general fertility of the soil by means of dung or other fertiliser. The fruit of the Strawberry also contains a large amount of soda. I have grown a large quantity of Strawberries for market, and my neighbours have told me that the fruit has been exceptionally fine, and have been surprised at my crop compared with theirs. I believe it is largely due to supplying the plants with soda, besides nitrogen and phosphoric acid by means of bone dust. I see Mr. Tonks mentions superphosphate in his formula. For my part I do not like to put superphosphate on the ground because of the acid it contains, and I use bone dust instead.

Mr. Tonks thinks it is wise to apply iron in case it is required. The quantity of iron present in our soil I think disproves this, and indeed I suspect iron is a cause of canker, for the more the subsoil here is red with iron, the more the trees suffer from canker, and I apply such manures as I think tend to dissolve this iron.

Very likely if trees have a sufficiency of soda and other necessary minerals they might be able to withstand the iron. I hope other contributors will give their experience.—Walter Kruse, *Maidstone.*

I read with much interest the valuable paper on canker by Mr. Tonks reproduced in last week's Journal, the conclusion he arrives at being that the secret of the matter lies in some deficiency of the mineral elements the soil should contain to enable the trees to grow healthily and vigorously. It is very noticeable that this gentleman makes no reference to the relation of acari to this malady, on which Mr. Hiam and others have laid so much stress. As you may remember, though I could not accept the view that an attack of acari originated the canker complaint, I was fully convinced by observation that the insects often seriously aggravated the mischief, hence the advisableness of dealing with them. I think it is in evidence that certain varieties—of the Apple obviously, probably also of the Pear—are specially liable to canker. I do not know in what relation this fact stands to Mr. Tonks' theory.

During the year 1884, and 1885 also, I think, you had complaints concerning a large aphis of a black hue, which infested Chrysanthemums in some districts, and which, if rarely numerous enough to prevent flowering, was decidedly a source of harm to the plants. Have you heard of any recent appearances of this? It was presumed to be exotic, and therefore might die out, particularly as, like others of the aphis group, it would very likely migrate in spring or autumn, and might fail to find a change of food suitable to its habits were it a foreigner.—J. R. S. C.

ROMAN HYACINTHS.

In my opinion Roman Hyacinths are not so much grown as they merit, more especially for flowering at Christmas. Those who grow many Chrysanthemums may find them attractive in November and the early part of December, but by the middle of the latter month their beauty has departed. Such pure fragrant flowers as those of the Roman Hyacinth are then simply invaluable. We have tried to force many bulbs into flower at that time and failed, and I hold that all who have only moderate means of forcing will be unable, as a rule, to flower any of them by Christmas excepting the Roman Hyacinth. With it, however, there is no difficulty, and this is why it should be forced more generally than any other; indeed it flowers so freely about midwinter as hardly to deserve being termed a forced plant, and no one ought to have the idea that it is expensive to secure it in bloom when the bulbs are potted in October. If kept under ashes the greater part of November, or until the growths have become 2 inches or so in length, it is afterwards a difficult matter to prevent it flowering. We require our earliest flowers of it about the middle of December, and the

* Containing Nitrogen, 0·17.

last about the middle of January, and we are afraid to pot the last bulbs until the middle of November, as by merely keeping them in a temperature that exeludes frost it is a difficult matter to prevent them flowering before they are wanted. One year we purchased cheap bulbs and thought we had secured a bargain, but many of them failed to produce a flower. Since then we have had the best obtainable, and the majority of them produce two, and many of them three spikes.

The largest flowering Hyacinths have a fine appearance when potted singly in 5 or 6-inch pots, but the small Romans are not so massive, and single plants do not look well even in small pots. They appear best in little groups, and if six or eight bulbs are placed in a 6 or 7-inch pot they will give much satisfaction. We find them grow most freely in a somewhat light rich soil. The pot is drained and filled with soil, and then the bulbs are pushed into it, the soil being pressed hard down afterwards, and only the crowns are visible when potting is completed. They are then placed as close as they will stand in a cold frame, and are covered with ashes to the depth of 8 or 10 inches. The lights are arranged over them to prevent the soil being saturated with rain, and they are left undisturbed for three or four weeks. At the end of that time it is always found that the roots have penetrated the soil freely and the tops have attained a height of several inches, then they are ready for taking from the ashes and placing in a temperature of 60° or a little more to induce them to flower. If one, two, or three hundred are potted and plunged at once, and only half this number are required to form the first, place those not immediately forced in a cold frame, and keep them there for a fortnight or so, when if placed in a little more heat they will succeed the others. As the tops expand more water is required, but the spikes do not require staking, and by the time they are in flower they will be surrounded by a quantity of green foliage, which has a very cheerful appearance. Once in flower they may be placed in the greenhouse or conservatory or cut for the rooms.—M. M.

GRAPES SCALDING.

Mr. Riding, at page 333, appeared to consider that the ideas I advanced on this subject are mere theory, but I can assure him such is not the case. My ideas are entirely based upon facts and close personal observations, and I can give him a case in point. Upon taking charge of a garden a few years back in the month of November, I found a quantity of whiting remaining on the vineries, three in number, and I was informed it was used to prevent scalding. The two earliest houses were constructed of iron rafters and copper bars, with sliding lights, but each alternate light was fixed, so that only half of them opened at the top. The varieties of Grapes in the earliest house were Black Hamburgh and Buckland Sweetwater, in the second house Muscats chiefly, also in the late house which was constructed of wood for rafters and bars, with continuous opening lights top and bottom; the two early houses had also continuous opening lights in front]. The varieties were eight of the most popular late Grapes, including three Vines of Lady Downe's at the warmest end, and I was informed that they were all scalded more or less; but the Lady Downe's Vine at the end (west) was the one that suffered most, more than its two neighbours, and I had ocular proof of the fact; but the other varieties were not so conspicuous in that respect, the Muscat of Alexandria next to the Lady Downe's appeared to be the worst. The following season, as the Vines came on in succession, the precautions given on page 294 were faithfully carried out by the young man in charge, and the early house, which was started in January, escaped without any artificial shading, but in the Muscat house, which was started a month later, a few berries were touched, as at the time of stoning I remember it being extremely hot, and with all the ventilators and doors open the temperature was more than I desired; but that was the only season they did scald while I was there, and the late house being better constructed as regards ventilation, escaped without any of the bunches being damaged by scalding. Previous to taking charge of these gardens, I had charge of some vineries where Lady Downe's was grown, and scalding was not seen there; and I know of other places where scalding is scarcely seen, and the ventilation has been attended with the greatest care in these cases. I advocated the practice that has done me good service, and I am at a loss to understand the same practice failing with others.

In advocating fixed temperatures for the guidance of those in charge, I did not consider it necessary to add that due allowance should be made to meet exceptional circumstances, as I considered that is generally understood, as I am fully aware that it is neither necessary nor desirable that the temperature should be so exact. Though these fixed temperatures are so much condemned by your correspondents, in what way are we to communicate to the inexperienced young men the temperature desired in the various compartments under their charge better than having them attached to the thermometers? The system is carried out in some of our best establishments, both private and public. The system in itself is right enough; it is its abuse that leads to bad results, as in many other good customs. The rational system advocated by some of your correspondents may be successful in the hands of experienced men, but I consider dangerous in a high degree with the inexperienced, and likely to lead to carelessness. I am fully aware that there are many ways and means of attaining the same end, and let each individual adhere to those he finds the most successful, but when success does not accompany our efforts, it is then time to seek a change to remedy the evil. I did intend writing more fully on the subject of scalding, but Mr. Coombe I consider has treated it more successfully than perhaps I could.—W. Simpson.

ORCHIDS

SATYRIUM CARNEUM.

Few members of the genus Satyrium are grown in collections of Orchids, yet they are interesting and in some cases beautiful.



Fig. 46.—Satyrium carneum.

They are somewhat difficult to manage successfully, but with a little careful attention their peculiarities are soon ascertained. Cool houses or cold frames suit them best, for, like most of the terrestrial Orchids from temperate climates, they are impatient of excessive heat or undue exposure to the sun when in growth. A compost of light loam, peat, sand, and leaf soil generally gives the best results, supplying water with great care. S. carneum was recently shown by Mr. T. S. Ware of Tottenham before the Floral Committee of the Royal Horticultural Society, when a first class certificate was awarded for it. The flowers are borne in a stout

spike with imbricating leaves and bracts, as shown in fig. 46, the colour being a soft blush or pinkish hue. S. aureum is one of the finest of the genus, the flowers large, rich orange, occasionally shaded with crimson. The last named plant has been successfully grown by Mr. Wildsmith at Heckfield.

SOPHRONITIS GRANDIFLORA.

This bright Orchid is flowering well at the present time in the gardens of Chios House, Clapham Park, and this charming Orchid is one of many that are well grown by Mr. W. Collins, well known as the Secretary of the United Horticultural Benefit and Provident Society. That Mr. Collins' zeal on behalf of the Society does not cause him to neglect his professional duties is evident from the condition of the plants under his charge, a somewhat extensive collection, testifying by their healthy appearance to his skill as a cultivator.

CYPRIPEDIUM ELLIOTTIANUM.

A new Cypripedium has recently been imported from the Philippine Islands, and has received the above name. A flower which expanded on the plants while in the cases has been forwarded to us with a leaf. It is evidently a strong grower, and is said to be very free, having been found with five flowers on a spike. The flower sent reminds us of C. Stonei in shape, the lip veined and flushed with rosy purple, the dorsal sepals white with strongly marked longitudinal deep purplish crimson lines, the petals narrow, drooping, and dotted with a similar colour to the lip on a white ground. The flower in question is no doubt much below its full size, but it is 3½ inches in depth from tip to tip of the sepals, and the petals are about the same length each.

ORCHID PROTECTOR.

Enclosed please find model of a contrivance for protecting the young growths of Lapagerias, Orchids, &c., from the attacks of slugs, mice, woodlice, &c. As you will see, the protector is made so that the growth to be protected comes through the central tube, the space between the tube and outer rim being filled with water or chemicals distasteful to slugs and other vermin. It is made in various sizes, and we intend to have it made in pottery ware from about 3 to 5½ inches in diameter. We have it in zinc with three prongs at the bottom to fix it firmly in the soil. It is the invention of H. R. Bridson, Esq., and is provisionally patented. Will you kindly give me, through the Journal, your opinion of it, whether there is likely to be a demand for it sufficiently large to make it worth while to complete the patent and advertise it in the gardening papers? At present I am unable to say at what price it will be sold.—T. Arrowsmith.

[The contrivance appears to be a simple and useful one that could no doubt be produced at a cheap price, and in that case would probably command a ready sale if well advertised. It consists of a funnel into which is soldered a cylinder at the lower end, thus leaving a space to be filled by a liquid between the expanded portion of the funnel and the cylinder. There might in some instances be a little difficulty in fixing it over Orchid spikes, but the three prongs mentioned would facilitate this considerably.]

ORCHID FLOWER HOLDER.

Mr. Alfred Outram, 7, Moore Park Road, Fulham, sends us a specimen of a contrivance for holding Orchid flowers when cut from the plants, a patented invention by Captain Maxwell, Terregles, Dumfries. Mr. Outram observes, "It is a fact well known to all Orchid growers that valuable plants are frequently much reduced in vigour and health through their flowers being left on them too long after they have reached maturity. The object of this simple contrivance is to enable growers to relieve their plants by cutting off the spikes, putting them in the tubes filled with water, and inserting the flower-holder in a natural position in the pots. The wire being pliable, the tubes can be placed in any convenient position, so that a natural effect can be gained by showing the spikes in conjunction with the plants, at the same time relieving the latter of the heavy strain upon them. Floral decorators will find the Orchid Flower-holder most useful, inasmuch as being made of any length it will enable them to arrange for the distribution of flowers in positions that without it cannot now be utilised." The holder consists of a simple narrow cylinder, closed at the lower end, and fixed to the upper portion of a stout wire, which can be inserted in a pot in any desired position.

PLANTING FLOWER BEDS FOR SPRING.

I notice in the Journal of October 11th a few words on this subject by Mr. Ward, and now is the time when the subject should be brought prominently forward, for our ordinary summer gardening has this season been very unsatisfactory. The best bed I had amongst others was one of a silver-leaf Pelargonium and Viola Countess of Kintore, and I have seen how well Violas have flowered in Mr. Dean's nursery at Solihull, which is near to our gardens, so that I have determined to use them more extensively another year. I know also that Mr. Brown at Elmdon Hall, one of the best known gardens in the Birmingham district, intends discontinuing to some extent the usual bedding plants and using Violas much more than he has done. Violas work in so well with Tulips, Narcissus, and other plants, and with these bulbs keep up a succession of bloom from the end of March to as late as wanted—that is for spring bedding; then the Violas can be taken up in June, cut back, and laid in on a shady border for autumn. Violas for planting in May and June should be removed with balls of wet earth or from pots, but as I have grown Violas now as decorative plants for a few years, I strongly advise planting in October or November for a spring and summer display. The selection I have made this year for adding to mine are:—In yellows, Golden Prince Improved is the best and most lasting deep yellow, and Ardwell Gem, pale yellow, and both of a dwarf compact habit. In whites, Countess of Hopetown supersedes so many others, dwarf and compact, of good constitution, and a wonderful bloomer; and Mrs. Grey is a very free bloomer, but is tinted with lilac in hot weather, but it has the merit of being very sweet scented. In blues nothing equals Dean's True Blue, perfect in habit and an excellent bloomer. Queen of Lilacs and Archie Grant are two other first rate varieties. Holyrood was always a favourite with me, and it has done well this year. There are others of great merit, and many of the new ones of great beauty. Elegans, for instance, a pretty lavender, and makes rather long growth, but is a great bloomer, and fine mixed with yellow Calceolarias or white variegated Pelargoniums. I have seen the Violas about here, masses of flower which the continued wet weather did not seriously affect, whilst beds of Pelargoniums, &c., had a sad washed-out appearance. The Violas were bright, for although heavy rains caused a little hanging of their heads, an hour's sunshine brightened them again. I find, however, that the flowers of the purple varieties will not stand so much wet as the others do, but damp off, and I find that of the purples Unique did the best. The Aubrietia I find to be most useful for spring work, and the Silene where it will stand, but in the midlands I find a difficulty in keeping it from damping unless in a mild dry time.—W. C.



NOTES ON PLANTING.

The time has now arrived when rosarians should be busy in making arrangements for planting, for forming new beds, ordering new Roses, and moving plants of their own. November is generally considered the best month for planting, but probably a good many plants, all those which have ceased to grow, might now be moved with safety; and the sooner the better, as the fact that Roses do make fresh roots during the winter months was, if I recollect right, fairly established in the Journal some years ago. Any time during the winter will do for planting when the weather is open and fairly dry, though that combination is not always easy to find after Christmas; in fact, in the disastrous year of 1879 I successfully moved some outdoor standard Roses from a place two or three counties away on May 10th, and they grew and did well. Still, it is best to plant early, not only for the sake of the well doing of the plants, but also because we have now a better chance of obtaining good plants from the nurseries than when their stores are running low. And on this subject I am glad to think that amateurs may congratulate one another upon the fact that Roses are now "cheaper than ever."

The main points in Rose-planting are pretty generally understood, and need not be enlarged on. They are:—Do not unpack in severe frost; lay in the roots, and perhaps wet the tops till the actual time of planting; never expose the roots to the air longer than necessary; have some fine fairly dry soil under cover to place against the roots if your soil is very heavy, or if you are obliged to plant at a wet time; do not plant deeply, but with dwarf budded plants just bury the union of stock and scion; cut cleanly off all bruised portions of roots before planting; let all the manure you use be well rotted, and let none of it actually touch the roots; plant firmly, carefully, and evenly.

All these points are to be found mentioned in any work on Roses or calendar of operations; but in the excellent instructions issued with Mr. Frank Cant's catalogue I find two points which are not often alluded to. The first relates to Rose plants, which, owing to delay in transit, arrive in a shrivelled state. I cannot answer for the treatment recommended, but can quite believe that it would be effectual. It is simply to bury them completely, roots, tops, and leaves, about 6 inches deep for three days, soaking the whole, when buried, thoroughly with water. I have never had occasion to try this myself. There must be, I should think, very unreasonable delay in carriage, or considerable want of care in packing, to cause sound wood to arrive in a shrivelled state anywhere within the British Isles; but I imagine it might well happen with exported or imported plants, and if anyone on receiving Roses in such a state should be inclined to throw them away it would be well to remember and try this plan.

The second point is the arrangement of the roots in planting. This

is very important, and indeed is the very essence itself of successful planting. Each root should be laid out separately and carefully; and in doing this remember that the bark, so to speak, of the roots is easily rubbed off, and any such wound causes injury. In handling each root "use him as if you loved him," as old Isaac Walton said of the worm as he passed the fish-hook through him. Share the whole room at disposal equally and fairly among the roots, keeping them from touching each other. If it seems impossible to prevent their crossing raise one and lower the other, and put some fine soil between them. If circumstances compel you to fit the roots to the place instead of the place to the roots choose rather to cut a root off cleanly than to coil it round. We will not now raise again the question of last year as to whether it is desirable or not to retain the tap roots of Roses worked on the Briar seedling; but remember that the minutes spent in planting are all-important to the spring growth, and that it is little use wasting much time in careful pruning of the branches in March if the roots are packed in anyhow in November. A careful amateur, even if he is unable to assist in it himself, will not delegate the work of planting in his absence to anyone whom he has not carefully proved by experience. And, lastly, remember that it is very difficult for one man to manage anything but the smallest plants alone; and in all cases two men will do the work quicker and much more efficiently.

I always move a few newly budded stocks every year. Care in planting is everything in this case, and a certain proportion will do as well as if they had not been moved. In April, 1887, I found a budded Briar cutting in a secluded part of the garden which had been accidentally dropped the November before, and had lain on the ground all the winter; it did fairly well on being planted carefully. I rescued another from the rubbish heap last winter, just in time to prevent its being burnt, and that, too, made fair growth; but, as a rule, it is better to leave the budded stocks where they are, if possible, for one year.

Now is the time also to prepare Briar cuttings for striking; a far larger proportion will grow, if put in now, than if inserted later. Make the cuttings about 10 inches long; be very careful to cut out all the eyes except the two top ones. Choose well-ripened small wood in preference to sappy thick shoots, and insert them up to the bottom bud in not too heavy soil. It must be a clean piece of soil, too, or the cuttings must be set well apart, for it is a difficult crop to keep free from weeds. If exposed to a severe winter it will be well to go over them in the spring, and push down again to the bottom of their holes any which have been raised by the frost.

The severe frosts which we have already had have cut off all our tender flowers, and at the same time I am glad to say have put a stop to the earwigs for this season. From the end of May to October 1st we destroyed on an average 400 a day, but they completely disappeared with the first frost, and the only one I have seen since was a lively specimen which arrived by post last week inside my copy of the Journal, so there are some in Fleet Street still.

ROSE STOCKS.

I do not think "Duckwing" would find any of the H.P. Roses better than the common Briar as stocks. The advantage of the latter is that, either as cutting or seedling, it forms very strong roots the second year, which the H.P. Roses do not do by themselves. It would not be much in favour of John Hopper as a stock that it does not generally make base shoots, for it certainly would, when cut back after budding, if the eyes had not been originally taken out. Some of the Gloire de Dijon race of Teas form pretty good stocks for strong-growing Teas or for Maréchal Niel. I have now a capital strong plant of William A. Richardson, which I budded on a cutting of Madame Berard. It seems a fair question as to whether Tea Roses should still be allowed to be shown among the H.P.'s. Personally I should much deprecate their exclusion; and it must be remembered we have as yet no yellow H.P.

It is well known that what Mr. Murphy calls "manufacturing yearly Roses" is a process almost necessary for exhibitors, because some of the best Show varieties are seldom found to perfection except on yearling plants. This entails a double amount of space, and a fresh supply of stocks every season. Some years ago I "had an idea," as the French say, by which I hoped to obviate this necessity. Weakly sorts, and those of bad constitution, do best the year after budding, because they are so strongly supported by the abundant roots called forth by the wild top growth of the year before. They fail, comparatively speaking, the next year, because their over-weak growth, which alone has been permitted, has starved the roots and rendered them weaker. My idea was—and I only thought of standards at that time—not to bud on the top lateral, but on one below it, and in the following spring in cutting the top lateral away, not utterly to destroy it, but allow room for one wild bud at least to perish. This wild shoot to be pinched back and ripened as much as possible without actual destruction during the time of growth and flowering of the Rose; but, as soon as the two or three blooms had been taken, to be allowed to grow again as much as it liked during the rest of the year. I fancied this would restore and keep up the strength of the roots. The following March the wild shoot and the Rose to be pruned back to one bud each, and the Briar shoot to be pinched back during the spring as before; and the idea was that the plants would thus, during the months of August and September, yearly renew their youth. They would not look very nice during the autumn months, but would not be worse in appearance than budded stocks usually are, and the plan was only meant for those sorts which exhibitors consider it necessary to bud each year, and which are not suited for general garden decoration, such as Horace Vernet (especially), Harrison Weir, Louis Van Houtte, Xavier Olibo, and perhaps Monsieur Noman.

I did make a trial with a small row of standards budded with Horace Vernet, but happened to leave my then residence before the experiment was complete, and have never had any standards since. It has now, however, occurred to me that the same thing might be carried out with Briar cutting, and even with Manetti, though not very well with Briar seedling; and I mean to try it.—W. R. RAILLEM.

ROSE CULTURE.

[By Mr. T. Bones, gardener, Tower House, Chiswick, winner of first prize for an essay on some gardening subject. Prizes offered by Mrs. S. A. Lee, 4, Arlington Park Villas, Chiswick, for competition by members of the Chiswick Gardeners' Mutual Improvement Association, under the age of thirty.]

(*Continued from page 390.*)

FORCING.

ROSES can be had early in the year (and what is more acceptable than blooms of this charming plant in spring time?) by placing them in gentle heat. Of course, they must be previously prepared for this work, and none but well-established plants should be forced. The wood should be well ripened up by the autumn, and pruning should be done when the plants are at rest. Much time is lost if this is deferred till the buds begin to burst—not only time, but it tends to weaken the plants, because the young wood swells, and that at the base remains dormant, as one cuts away the growth that has already been made. On the other hand, if the pruning had been done early, all the energy would have gone to produce flower shoots. As soon as the plants are placed in heat they should be kept syringed and placed near the glass to get all the light and air possible. They should never know the want of water. When the buds are beginning to swell they should be supplied with stimulants. Soot water or Clay's fertiliser will be found beneficial, and may be given as required. If convenient the pots should be plunged in leaves, as this tends to keep them moist. If mildew makes its appearance give a dusting of flowers of sulphur. Green fly should be destroyed by fumigating with tobacco.

Select plants for forcing that are of a free-growing nature and dwarf habit, care being taken not to let any cutting wind come directly on the plants, as this is injurious to the young growth. As soon as the plants have done flowering, and the weather is favourable, they should be placed out of doors, and kept syringed once or twice daily. This keeps down red spider and other insects. Watering should be well attended to when making their growth; the pots may be plunged in ashes. About July the plants that require it should be repotted, but care must be taken not to overpot them. Use a compost of fibrous loam, cow manure, and a little peat or leaf soil and sand for Teas, but for Hybrid Perpetuals and all other strong-growing sorts the compost should be more of a stiff nature; pot firmly. Those that do not require potting should be top-dressed, taking off a portion of the old soil and replacing with new, making it quite firm.

SELECT LIST OF VARIETIES.

The following serviceable sorts I would recommend for general purposes—namely, Teas:—Anna Olivier, flesh colour, large; Catherine Mermet, delicate flesh colour; Devoniensis, creamy white; Gloire de Dijon, buff, orange centre; Isabella Sprunt, sulphur-yellow, very free; Niphetos, white; Perle des Jardins, deep straw colour; and Souvenir d'un Ami, salmon-rose.

Céline Forestier, bright yellow; Rêve d'Or, yellow; Maréchal Niel (everybody's favourite), bright yellow; and W. A. Richardson, deep orange-yellow, are all good Noisettes.

Abel Carrière, velvety maroon; Alfred Colomb, carmine-red; A. K. Williams (a grand sort), crimson; Beauty of Waltham, light crimson; Boule de Neige, white; Baroness Rothschild, pink; Charles Lefebvre, velvety crimson; Captain Christy, flesh colour; Dr. Andry, red; Fisher Holmes, scarlet-red; Général Jacqueminot, brilliant red; John Stuart Mill, clear red; John Hopper, rosy crimson; La France, lilac-rose; Prince Camille de Rohan, dark crimson; and Star of Waltham, bright crimson, are very select H.P.'s.

In conclusion, let me observe that whatever the would-be Rose cultivator takes in hand with regard to the national favourite flower, let it be done thoroughly, for, as Dean Hole has so well written in his delightful book on the Rose, "He who would have beautiful Roses in his garden must have beautiful Roses in his heart!"

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.

NEW SERIES.—No. 10.

No one can stroll about the districts of western London which it is the fashion to call Tyburnia and Westburnia, comprising portions of what is otherwise known as Paddington and Bayswater, without seeing many proofs in gardens and windows that the inhabitants are fond of flowers, a fact which is of advantage to the florists of the Uxbridge and Edgeware Roads. Paddington is not one of those suburbs which in the olden time were notable for their gardens, orchards, and parks. The greater part of the moist meadows into which it was divided were devoted to pasturage till some fifty or sixty years ago. On its east, however, there was woodland, for St. John's Wood was not merely a name, it had a fine growth of

timber trees when it was the property of the Knights of St. John, and a few of its old Elms remained after the other trees fell before tha axe. In Marylebone Park adjoining, and of greater extent, the English kings hunted deer, but this was disparked and the ground cleared, fortunately not to be covered with houses, so that eventually another park, the Regent's Park, arose, preserving this large open space as one of the lungs of London. This, however, belongs not to my present subject, and I only name it in passing, because its central ground, now the garden of the Royal Botanic Society, was formerly a much-visited nursery belonging to Mr. Jenkins, and from which were distributed many of the trees or shrubs we now see in North-west London. His nursery was noted for forced flowers, the demand being sometimes very large in the early months of the year.

Marylebone Road is one of those semi-suburban roads, which, even when the growth of streets in all directions about them is altering their neighbourhood, still manage to retain the aspect they bore during the old coaching. The houses lie back with long gardens fronting the road, shaded with occasional Planes, Poplars, and Limes, and their walls are thick with creepers, such as Clematis and Jessamine, and I observed a few covered with Vines, but they have probably ceased to bear fruit. The gardens have also many of the old-fashioned flowers and shrubs; amongst the latter I noticed sundry instances of what are not unfrequent about London, both evergreen and deciduous species which have been suffered to grow to their own liking, untouched by the shears. These bushes become a dense mass of twigs, a joy to the cockney sparrow at this season, as he can retreat within them and bid defiance to prowling cats. The burial ground of Marylebone church in this road is now open to the public, a space of about au acre; its few trees are not aged except two or three of the Elders which our ancestors loved to plant in such spots, and no attempt has been made to cultivate flowers here, but the two principal bed contain—the one Lilacs and Thuias in circles, chiefly the former arranged in circles, the other Privet bushes in rows—the effect being somewhat singular. We come upon a different scene in the Paddington Street extra ground of three acres, for this is gay with October flowers, the yellow hue predominating. A variety of Dahlias, single and double, plentiful Marigolds, appropriate to a place once dedicated to St. Mary; Eschscholtzias also, Helichrysums of two colours relieved by Phloxes, and a few late Autirrhinums. Tender perennials had been planted out singly in the borders, such as Pelargoniums and Fuchsias, but the cold nights were touching these. The older trees in the ground were Birches, Poplars, and Willows, and some twisted Hawthorns, with lines of young Planes and Limes. Altogether it is a pleasant garden, a boon to young and old in that district.

Going northward to St. John's Wood we pass Park Crescent and Park Square, private grounds for the residents, containing together about 11 acres. They are well timbered, in fact the numerous trees do not much favour the cultivation of flowers or the growth of grass, yet it would be a pity to remove any, and vacant spaces here and there in the centre are filled during summer with choice flowers, now just housed for the winter. Sunflowers had been largely sown iu the spring, and within Park Crescent the long lines of these tall plants had an odd appearance. An inspectiou of the mode of growth of the flower-stalks when a number are looked at dispels the theory that this species has any partiality for opening its flowers towards the south. Round this Crescent there is a hedge of Hornbeam, which is not often seen in London squares, but it has not the advantages of other species plauted for hedges which are thorny or of denser growth. On the west of Regent's Park, in St. John's Wood Road, are three open spaces contiguous to each other. Farthest west is the well-known cricket ground, Lord's, at one time a nursery, or part of it was at least, not now accessible to the public; next it the mansion and garden of the Clergy Orphan Asylum, and across Wellington Road is St. John's Wood Chapel burial ground, a space of seven acres, open to all. The old tombstones have been left intact, which is just as well, for had the ground been cleared of these to lay out flower beds, many of the trees must have been also removed. By these the walks are made shady yet cheerful, hence the place is much liked by quiet strollers. Doubtless the trees have each their history could we trace it out. The varieties are numerous, the largest being Scotch Elms, Willows, and Black Poplars. The Willows are, as usual Salix alba. It is surprising that the devouring caterpillar of the goat moth has suffered some of them to reach their present size; this insect is also an unsparing enemy to the Elm, the Scolytus beetle completing the damage begun by the caterpillar, but I think this attacks the English in preference to the Scotch species. Here are good examples of the Weeping or Babylonian Willow, of the Weeping Ash, and the Beech, a tree, however, which does not seem to flourish in London suburbs. An avenue of Horse Chestnuts still retaiued many of its leaves, though a row of Limes close by was almost bare. Some remarkably fine Portugal Laurels were noticeable, and examples of the Sumach and purple Barberries, rich in leaf, near melancholy looking Guelder Roses—how fond Londoners were of this species, I suppose because it flowered early when it inclined to bloom at all, for this is of uncertain appearance in the town smoke. I am surprised the Mezereon has not had more patronage, as it does not object to the London air, and, like the Jasminum nudiflorum, clothes its twigs with blossoms at the dawn of spring. A few large Hollies and Box trees look as if they had been planted when the ground was first enclosed, but the Larches and Firs have been a failure, the clay soil does not suit them at all. An appearance of antiquity has been given to the chapel by Ivy planted all round the walls, which has made rapid growth and festooned itself over windows, turrets, and buttresses. The most singular tree in the ground was a Plane, which was about 20 feet high, and had thrown out branches forming circlets one above another, unlike its wonted mode of growth.

Paddington Green, in the Harrow Road, has no trees; it is cut into four divisions by railings, and retains its grassy greenness, but flower beds have been made amongst the turf, and these are filled during the summer with bedding plants. In most cases one kind is predominant, and beds of Calceolarias, Lobelias, and Pelargoniums were putting forth late flowers, where they are edged with Golden Feather, this is allowed to remain, and it keeps up a semblance of green in the winter, till spring bulbs are introduced. Near to this is Paddington churchyard, of 3 acres, which offers no points of special interest. On my visit to this part of Londou in the middle of October an aphis migration was going on to a small extent. This would represent the customary autumn migration of winged types of these insects, but it was decidedly late. Aphides generally have been far from abundant this autumn owing to the heavy rains, the exceptions are those species that live either in circled up leaves and buds, or upon the roots of plants.—J. R. S. C.



THE SHOWS.

THE Chrysanthemum Shows commence with Southampton to-day (Thursday), to be followed next week by Kingston, on Tuesday, November 6th; the National Chrysanthemum Society at the Royal Aquarium, Westminster, on Wednesday and Thursday, November 7th and 8th; Tooting on the same days; Portsmouth on November 7th, 8th, and 9th; Teddington on Thursday, November 8th, and the Crystal Palace on Friday and Saturday, November 9th and 10th.

We are requested to state that the Bedford Chrysanthemum Show will be held on November 14th and 15th, when, as several open classes are provided, it is hoped that the metropolitan exhibitors may be induced to compete. The Hon. Secretary is Mr. J. Sanders Clarke, 49, Linden Road, Bedford.

NATIONAL CHRYSANTHEMUM SOCIETY.

A FULLY attended meeting of the Committtee was held at "Anderton's Hotel," Fleet Street, E.C., on Wednesday evening last, Mr. E. Sanderson, the President, in the chair. The Eastbourne Chrysantbemum Society was affiliated, and eight new members were enrolled, bringing the total up to 581. The Hon. Secretary reported in reference to the coming provincial show at Sheffield that everything connected with it was quite favourable, and a great deal of interest has been taken in it by the inhabitants. It is hoped that one of the Ladies Fitzwilliam will attend and open the exhibition. The Hon. Secretary reported that the British Fruit Growers' Association had applied to hold a meeting at St. Stephen's Hall on the second day of the November Show—the 8th—and that the authorities at the Aquarium had consented; also that he had sold 150 copies of the new catalogue issued by the Society, that ten or twelve dozen copies were out on sale or return, and that an application had been received from Mr. E. H. Libley of the American Garden, New York, for two dozen copies. Next came the presentation by the President to Messrs. Lewis Castle, Harman Payne, and G. Gordon, of the silver medals of the Society, voted to them for their services as revisers and editors of the new catalogue. The Hon. Secretary also reported that he had paid the sum of £52 10s. for medals applied for by affiliated societies. By way of extending the usefulness of the Society, Mr. C. Harman Payne was appointed to act as Foreign Corresponding Secretary, as a good deal of correspondence with the Society came from abroad. It was resolved that the Judges of fruit and vegetables at the November Show should examine all new vegetables sent for certificates, and award the same to those subjects deemed worthy. It was unanimously resolved that the annual dinner of the Society should take place on Saturday, December 15th, at "Anderton's Hotel." It was also resolved

that Sir Guyer Hunter, M.P., be requested to open the Exhibition at the Royal Aquarium, on Wednesday, November 7th. A cordial vote of thanks to the Chairman brought the proceedings to a close.

LADY SELBORNE.

THIS variety has again this season maintained its reputation as a capital producer of white flowers at a time when Madame Desgranges and its relatives are past, and before Elaine comes in, which is an advantage, because the plants can be cleared out to make more room for the general collection. Two plants in a 10-inch pot will produce ten or twelve good sized pure white blooms if the plants were topped when 4 inches high, afterwards selecting that number of shoots, removing all side growths and retaining one bud on each stem.

SŒUR MELANIE.

We have had abundance of flowers on dwarf plants of this variety in small pots. Plants that were topped once at 4 inches high, allowed to retain all their branches afterwards, are now 2 feet 6 inches high from the top of the pot, which need not be more than 7 inches across, are now developing a fine show of blooms of a delicate pink shade of colour which will change to pure white as they expand. The great character of this variety is the manner in which it blooms simultaneously, rendering the branches so useful for cutting with long stems without sacrificing many buds and partly unexpanded blossoms. More than this, it carries its foliage so well. This being of a deep dark colour at once renders it valuable to edge the fronts of groups. Soil of a good quality should be provided, and where pots of the size named are employed abundance of water will be needed several times a day to keep the foliage fresh and develope the blooms in the best possible manner.

TEMPERATURE FOR DEVELOPING THE BLOOMS.

Inexperienced growers of Chrysanthemums are often at a loss to know the temperature required for the plants at a time when the blooms are developing. I find there is a prevailing opinion that a fixed temperature is necessary at that time of the year. Circumstances must guide the cultivator in this, such as how the blooms are expanding according to the date at which they are required. The weather must be taken into account in admitting air to the plants. During bright sunny weather, if the plants are sufficiently forward for the date required, abundance of air should be admitted to dry the atmosphere, which is of great assistance in preventing the florets damping, causing disfigurement of the blooms, also reducing their size considerably. If wet or foggy the amount of air should be reduced and the pipes warmed. Blooms requiring this treatment should be partly expanded, say one-quarter developed if the show is in about three weeks' time. If the buds have not yet shown colour the plants must be kept closer, making use of sun heat early so as to avoid forcing the plants by fire heat later on. Chrysanthemums will bear a temperature of 60° during the night by fire heat, but a better development is effected in a temperature 10° lower if possible. In all cases where forcing the plants into bloom with fire heat is necessary a small portion of air should be admitted to the plants always; this prevents the petals damping somewhat, which is a serious hindrance to the proper development of the blooms.—E. MOLYNEUX.

CHRYSANTHEMUMS IN IRELAND.

SINCE my notes of last week I have a bad report to give of prospects of growers in this neighbourhood. The damp which made its appearance during the bright dry weather in the middle of this month increased rapidly since the present muggy weather has set in. Fine blooms, half expanded, which appear all right to-day get touched all over by to-morrow. The collections which have been best grown seem to have suffered most. It is very disheartening to see plants which have had the most careful attention since December last from the most experienced growers in Ireland now going to the bad, and apparently nothing can be done to save them. The plants looked splendid when being housed, having foliage down to the pots, and well set plump buds of great promise. Plants grown with a quantity of bloom for decoration, such as the Rundles, have escaped up to this. The varieties most affected are Ed. Audiguier, Madame Audiguier, J. Délaux, Jeanne d'Arc, Belle Paule, Fair Maid of Guernsey, the Empresses, and Blush Queen, &c. Some sorts, such as Comte de Germiny, Elaine, &c., are keeping well. I can only account for this result by thinking the cool wet summer prevented the foliage and wood ripening sufficiently, and the plants are now overcharged with sap. I shall be glad to learn the opinions of more experienced growers at your side of the water.—THOMAS PHELAN, *Clonmel*.

CHRYSANTHEMUMS AT SOUTHWARK PARK, S.E.

WE are desired to announce that to-day (Thursday) an exhibition of Chrysanthemums at the above park will be opened for the first time in the new house recently erected by the Board of Works. The public will be admitted free of charge from 10.30 till dusk daily. This is another addition to the free public exhibitions of Chrysanthemums in the metropolis, and the second provided by the Metropolitan Board of Works.

AT FOREST HILL.

MESSRS. J. LAING & SONS have their annual display of Chrysanthemums in one of the long span-roofed houses at the Stanstead Park Nurseries, which a few weeks ago were filled with brilliant Tuberous Begonias. Now, though with less brightness of colour to attract, there is equally as much to interest in the large collection of varieties, both old and new. Last year Messrs. Laing's plants were distinguished by their dwarfness, and good quality blooms were obtained from specimens that for grouping purposes were invaluable. This season, although there are sufficient dwarf plants for the margins of groups, the general stock has been allowed a little more extension, and a few experiments have been tried in another direction. Much smaller pots have been used for many of the plants than are usually recommended, and by restricting the blooms proportionately very satisfactory results have been obtained. Thus specimens in 48-size pots, both of incurved and Japanese, are in several cases bearing from two to three blooms of exhibition size and quality, and few would expect to secure such returns from plants in pots so small as that. Possibly the experiments may be extended in this direction another season. The plants are all in capital health, and notwithstanding the fact that in common with many others they were partially caught by the early frosts in October, they look very promising, the buds fine, mostly expanding freely, and apparently likely to come in well for the show time.

The collection comprises some hundreds of varieties, but we need only mention a few of the recent introductions or the present year's novelties. Foremost amongst these is Stanstead Surprise, the Japanese variety certificated at the last meeting of the National Chrysanthemum Society. It is a seedling of last year raised from imported seed, and is distinguished by its bold handsome blooms, with long, drooping, and curled florets, rich rosy crimson at first, slowly fading to pink, with a silvery reverse. Most of the blooms have been taken from crown buds; several others are advancing on the terminal buds that indicate similar characters, and which will come at the right time. One merit the blooms evidently possess—namely, good keeping properties, for some have been expanded two or three weeks, and do not seem much the worse now. Another seedling Mr. W. H. Burbridge raised a year or two before is coming in better condition this season than we have yet seen it. The blooms are of the Japanese reflexed type, with white fluted recurving florets, pure, full, and deep. A new Japanese from Délaux, named Madame Louise Leroy, is likely to be a good addition to the white varieties, the florets very pure, broad, and slightly fluted. It is considered as one of the best of the continental novelties sent out this year. There is quite a family of "Japanese Laings," the sterling qualities of which will be well displayed later on judging by the substantial appearance of the buds. M. John Laing and Madame J. Laing stand most appropriately at the head of the family both for size and merit; then come M. J. A. Laing and M. H. J. Laing, which should be followed by something extremely good in honour of Madame J. A. Laing, and then we may soon expect a Madame H. J. Laing. As regards the first four members of the family we were informed by the foreman, in strict confidence, that he had given them special attention for the credit of the firm.

Amongst other varieties worthy of note the golden yellow Japanese Gorgeous is very conspicuous, and should be useful for exhibition. Anatoli Cordinier has medium sized blooms with narrow drooping purplish florets, a rather distinct shade of colour. Album fimbriatum, Criterion, Val d'Andorre, W. Stevens, Mdlle. Lacroix, T. S. Ware, Mrs. Wm. Mencke, and Sarah Owen are also noteworthy in the Japanese group, while the incurved comprise good representatives of all the well proved varieties.

RICHMOND.

IT is somewhat strange that a town like Richmond cannot support a Chrysanthemum show, yet it would seem to be the case, for this year a dog and cat show has been substituted for the autumn display of Chrysanthemums and fruit. The district has so long been noted for its summer exhibition and the strong local enthusiasm, that it is to be hoped the substitution mentioned does not indicate a decadence in horticultural interest. The contrast, to say the least, is an unpleasant one, and it might be worth the while of those who still have a preference for the Chrysanthemums to endeavour to revive the autumn show. The best plan, where two shows are managed by one Society, is to keep the funds quite distinct, having a separate account for each. This has been found satisfactory in several such cases, as those who wish to support only one of the shows can readily do so, and it will soon be ascertained which is the more popular. The private collections of Chrysanthemums in Richmond itself are not very numerous, but the district around comprises many excellent growers who might be easily induced to compete. In the nurseries the plants are chiefly grown for cutting, and for this purpose Mr. W. Brown, St. Mary's Grove Nursery, has a large stock of plants. Elaine and other white-flowered varieties, with a few bright coloured sorts, are the leading favourites. Mr. Kinghorn also has several large groups grown with the same object in view, and abundance of blooms are obtained. But in both these nurseries the Chrysanthemums do not form the principal stock. Mr. Brown has an extensive, healthy, miscellaneous collection of Ferns, Palms, stove and greenhouse flowering plants, and bedding plants; and Mr. Kinghorn has a surprising stock of vigorous young Palms, the most popular sorts, like Latania borbonica, Kentia Fosteriana, and Cocos Weddelliana being largely represented.

TWICKENHAM.

CAMBRIDGE HOUSE, the residence of E. J. D. Paul, Esq., is close to Richmond Bridge, on the Middlesex side of the Thames, and there amidst some good general gardening, under the superintendence of Mr. J. P. Munro, Chrysanthemums have for several years been well grown, and the present season is no exception to the rule. Visitors at the Crystal Palace Show last November will remember the six grand blooms of Belle Paule which came from this garden, and several other

fine stands of blooms gained various honours at local shows. The collection of plants is not so large as some exhibitors would consider necessary, but every one is well grown, and the blooms expanding are in many cases of exceptional quality, only needing fine weather to keep them in good condition for the shows. For instance, the best examples of Edwin Molyneux we have yet seen are developing on crown buds, grand, deep, richly coloured blooms, showing the distinct characters of this variety admirably. Boule d'Or is another variety in remarkably fine condition, and there, too, is Grandiflorum opening well on crown buds in direct opposition to the experience of some growers. Deep, clean, incurved blooms and bright substantial Japanese characterise the collection ; but the other sections are also represented, and up to the present Mr. Munro has ample cause to be satisfied with his prospects.

At Poulett Lodge, Twickenham, Mr. W. Bates grows some Chrysanthemums, and grows them well, as indeed he does everything else in his charge. He does not pose, however, as a champion exhibitor with these plants, which are grown more for grouping or cutting. Still good blooms have been obtained that would not disgrace many exhibitions to be held this year. It is surprising that often without any special effort better results are secured than attend the more elaborate systems of culture. Not that any kind of carelessness is advisable, but sometimes growers become too anxious ; they try to hurry their plants too much, or to treat them too liberally, and in such a season as the present the effects are disastrous.

TEDDINGTON.

Mr. Walter Furze, The Roselands, Teddington, is an enthusiastic amateur admirer of the Chrysanthemum, and with his gardener, Mr. Coombs, has on several occasions in past years proved what a combination of skill and enthusiasm can produce in the way of exhibition blooms. Judging by the condition of the collection this season we should think they will surpass their previous record as successful competitors. The garden is situated close to the Thames, within a short distance of Teddington Lock, and consequently fogs, mists, and atmospheric moisture generally are so abundant at this time of year that it could scarcely be considered a favourable situation for Chrysanthemums. Notwithstanding this, however, the blooms borne by the 450 plants grown are the freshest and best we have yet seen around London. Incurved, Japanese, Anemones, reflexed, all are well represented both in varieties and number of plants, but there are blooms of the first two groups that for depth, solidity and cleanness are not likely to be surpassed by many in 1888. Empress Eugénie, Queen of England, Empress of India, and others of the Queen type are grand, while some blooms of Refulgence must be ranked amongst the finest that we have ever had the pleasure of seeing. In the Japanese also the same remarkable substance is notable, and a good example is afforded by the beautiful white variety Florence Perey. This was recently shown before the Floral Committee of the National Chrysanthemum Society, but judging by the blooms exhibited it was considered too thin to be worthy of a certificate. Had the Roselands blooms been shown there would have been no hesitation about it, for one of these is nearly 4 inches deep, a grand solid bloom of white lace-like florets, very pure and handsome. Mrs. J. Wright is also as beautiful as when shown last year, Edwin Molyneux and several other new varieties being scarcely less conspicuous. But to enumerate all of first-rate merit would include a large proportion of the collection, and we can promise that competitors in the same classes as Mr. Furze who succeed in winning the first prizes will amply deserve them.

Very near to The Roselands is Weir Bank, the residence of T. P. Chappell, Esq., and there also Chrysanthemums receive attention with good results. A three-quarter-span Peach house, 100 feet long, is devoted to the plants, which, though somewhat later than their neighbours, are creditable productions, good blooms being notable of most of the leading varieties. Mr. Davis evidently understands the requirements of his plants and treats them well.—L. Castle.

COLD FRAMES.

How few people who have a piece of ground at their command have known the delights of a cold frame. Many people have a yearning for a bit of greenhouse, and look forward to the time when they may have one, even if rude and unconventional, but a well-built cold frame, properly cared for, can discount the greenhouse in some respects both as to results and expense, for a greenhouse is expensive, that is, if you expect to keep it in proper trim during long cold winters ; and unless you have plenty of leisure time there are many days when you would want to delegate your duties to someone else, and take a breathing spell. A cold frame, however, can be run with the minimum of work and the maximum of results, provided you are not too grasping, and want to grow Orchids and exotics in it. But half-hardy plants can be grown in a cold frame to perfection, and I hope to show how this can be done, for the benefit of those who have never attempted to manage one.

First get your cold frame. This can be done on the assumption that you want one about 18 feet long and 6 feet wide. This will require six sashes 6 by 3 feet. For location, light being the essential in winter, an exposure to the south and east is the best, the morning sun in late autumn, winter, and spring being most valuable to all plants grown in frames. A stout inch plank for the back of the frame about a foot in width, and a somewhat narrower one for the front, to provide for the necessary slope towards the south or south-east, must be placed in the position selected for the frame, and the ends of the same kind of plank may be united to connect the two. These end planks should be cut so as to slope from the rear to the front and inside of the frame, at distances of 3 feet apart; small pieces of timber 2 to 3 inches square may be nailed to connect the rear and front planks of the frame. These serve as rests for the sashes when they are placed upon the frame, and as braces to strengthen the structure, without obstructing the light to any great degree.

The rear of the frame is thus about 4 to 5 inches higher than the front when in position, and affords a slope for the sashes, catching all the meagre sunlight of winter, and shedding the rain and melting snow which may fall upon them. Some frames may be dovetailed instead of nailed if the builder wishes to have more solidity, but this is not requisite. In the autumn another tight plank about a foot wide should be placed entirely around the frame about a foot from the inner structure, and fixed in an upright position firmly by means of short stakes driven into the ground. The space thus formed should then be packed firmly with dry leaves until entirely full.

This forms adequate protection against frost, and is absolutely essential if one desires to keep the contents of the frame in a growing condition during the winter. Six cold frame sashes can then be procured from any dealer, and in purchasing sashes it is well to see that they are strongly constructed and well glazed and painted. Cheap sashes are of little use, and the glass ought also to be of the best make to prevent unnecessary breakage and insure clear passage of the sun's rays.

Straw mats, which are used by market gardeners, are essential, and these can be made on the place. For a frame 18 feet long three mats would suffice. To protect these mats from snow and rain, six wooden shutters 3 feet wide and 6 feet long can be made out of boards and painted to prevent them from rotting; these, with the mats, ought to afford ample protection to any frame built as described from the severest frosts of winter, and if to the beginner the paraphernalia seems formidable, there is comfort in realising that it is not expensive, and ought to last several years.

With the frame constructed, and the protection of its contents provided for, the soil within it ought to be a good strong loam, well trenched or spaded, and for certain kinds of plants, like Pansies, it will be necessary to add well-rotted manure in liberal quantities. In subsequent comments upon the various kinds of plants which can be successfully grown and flowered in a cold frame, it will be shown which do better with or without manure.

The general idea prevails that manure is essential to all kinds of plants, but experience has shown that in instances where good loam can be provided, it is not only not essential, but an injury, notably in the case of Violets. This statement may be questioned by some, but close observers of the disease of spot, which has made Violet culture in many localities an impossibility, have found that the use of manure is one of the causes of the disease.

In a cold frame different kinds of soil may be provided for certain plants, according to their needs, but most of them are not exacting in this respect, all other essentials being provided for. In a cold frame many kinds of plants can be grown, to the delight and satisfaction of the owner. If a greenhouse cannot be had the frame affords an excellent substitute. There may be grown Violets, Pansies, hardy Primroses or Polyanthus, Japan Primroses or Primula cortusoides, one of the most beautiful plants we have, Anemone coronaria, a most gorgeous flower, in all shades of blue, scarlet, white, pink, &c. Christmas Roses or Hellebores, Daisies, tender bulbous plants, like certain kinds of Iris, Triteleias, Ixias, Freesias, &c., and many other things which, as one goes on gaining knowledge, offer themselves as delightful substitutes for the regulation greenhouse stuff which one sees on every hand. After experience with both greenhouse and cold frame, one hesitates as to which he would sooner part with, with an ultimate mental reservation in favour of the latter.

A cold frame needs attention. It must not be expected after it is constructed and planted that there is nothing more to be done. On the contrary, as soon as winter sets in it must be uncovered on all bright days, when the sun shines sufficiently to counteract the outside cold, and the sashes must be tilted a little to give air, unless the temperature is below freezing point, and in the afternoon, just before the sun leaves it if the weather is cold, the mats and shutters can be put over it, and it can be closed for the night. As the sun's heat grows and the days lengthen more exposure can be given until all danger of frost is past, when the sashes can be removed altogether. The contents of a frame, however hardy, are never improved by being frozen, so one must vigorously guard against Jack Frost.

If all this bother seems like drudgery then it had better not be attempted, but it is assumed the owner of a cold frame, who has mastered its management and achieved the best results, will feel that no effort or attention it too great for the proper care of it. Its delights and surprises are manifold, and many a toiler among commonplace surroundings and influences would find it a relief from the irksome cares which fall to the lot of most of us.—(*American Cultivator.*)

PLUMIERA BICOLOR.

At the last Floral Committee meeting of the National Chrysanthemum Society, Mr. H. Cannell brought up a fine example of a plant he had without a name, and after seriously puzzling the majority of those present, it was determined to be Plumiera bicolor (fig. 47). Though the

Plumieras are old inhabitants of our houses, they are now seldom seen, yet they are amongst the most beautiful members of the family Apocynaceæ. The flowers are large and fleshy, rather suggestive of the Oleander, and in the case of the species now illustrated they are pure white with a rich orange centre, also possessing a powerful but agreeable perfume. The leaves are large, of a glossy green hue, contrasting admirably with the substantial flowers. P. alba is another species with white flowers. P. tricolor has its flowers deeply tinged with rosy crimson, and there are several others of various tints. All are shrubby plants, sometimes attaining the dimensions of small trees, requiring a rich loamy compost, abundant water, and the temperature of a stove or warm conservatory.



FIG. 47.—PLUMIERA BICOLOR.

Notes & Gleanings

EVENTS OF THE WEEK.—The principal Chrysanthemum Shows for the present week are the following :—Southampton to-day (Thursday); Kingston, November 6th and 7th ; the National Society at Westminster, November 7th and 8th ; Portsmouth, November 7th, 8th, and 9th ; Teddington, November 8th, and the Crystal Palace, November 9th and 10th. Messrs. Smail & Co., 123, Fenchurch Street, E.C., announce sales of bulbs, Azaleas, &c., on November 5th, 7th, and 8th ; and Messrs. Protheroe and Morris will hold a sale of nursery stock on November 6th at Mr. T. S. Ware's nursery, Tottenham. The British Fruit Growers' Association will hold a meeting in St. Stephen's Hall, Westminster, on November 8th.

—— GARDENERS' ORPHAN FUND. — At a largely attended Committee meeting held on Friday evening last, Mr. G. Deal presiding, donations were announced of £11 8s. 8d. from the local Secretaries :— £10 from Mr. A. Dean, including proceeds of a concert at Chiswick ; £7 12s. from Mr. W. Wildsmith, the results of a garden fête ; £5 from the Hon. and Rev. J. T. Boscawen ; and £1 from the Oxford Carnation Show, per Mr. E. S. Dodwell. Receipts were presented from the guardians of ten children for moneys received by them, and accompanying letters showed how greatly the assistance was appreciated. It was stated that Mr. O. Thomas of Chatsworth is making preparations for a floral fête in the Stevenson Memorial Hall, Chesterfield, on November 14th, for the benefit of the funds. Mr. Bishop, The Grove, Teddington, was appointed local Secretary for that district. Sub-committees were appointed to consider special matters, and general routine business was transacted.

—— MR. C. ORCHARD writes : "Last SATURDAY IN THE ISLE OF WIGHT was like a summer's day. The hedgerows full of clusters of ripe Blackberries, and the cottage gardens were still gay with their summer occupants, mingled with autumn Roses and Sœur Melanie Chrysanthemum, which is now blooming profusely out of doors here. It is only in the lower gardens that the late frosts cut the Dahlias and other tender flowers down. The Myrtle trees are now beautiful with their white flowers and buds. Chrysanthemums in this neighbourhood are much better than I expected to find them, many of the Queen family being very forward." We may add that our correspondent, in addition to his present duties, has been entrusted with the management of the Bembridge Hotel, an excellent house and favourite seaside resort of visitors in the summer.

—— CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—At the annual general meeting of the members of this Institution held on Friday evening last, October 26th, Mr. George Gordon was unanimously elected Chairman of the meetings during the ensuing session. The following papers were promised to be read on the undermentioned dates :—November 2nd, Opening Address by the Chairman, Mr. George Gordon ; November 9th, "What Constitutes a Gardener," Mr. John Fraser ; November 23rd, "Roses and their Cultivation," Mr. T. Bones ; November 30th, "Economic Plants of the Order Labiatæ," Mr. A. Parsons ; December 7th, "An Over-supply of Gardeners—a Remedy," Mr. J. Barry.

—— SWEET-SCENTED FLOWERS.—"W. B." at page 342 evidently thinks that other people's corn must be measured with his own bushel when he states that scentless Roses ought to be discarded. This is a common error that many people fall into, not but what I am very fond of sweet-scented flowers myself, but a gentleman I had the honour of serving would not have a strong-scented Rose or Carnation in the house, much as they were liked in the garden. Another gentleman, the owner of a very large garden, was of the same opinion. Nor are these cases exceptional. Either for a drawing-room or for the decoration of the dining table sweet-scented flowers I find are not at all appreciated. Self Carnations, like Roses of a pleasing colour, have a rich appearance by artificial light, and when so used the less scent the better.—A DECORATOR.

—— GARDENING CHANGES.—We understand that Mr. John Crook has left Farnborough Grange, Hants, through the death of the late Wm. Sherwin, Esq., who was a great lover of horticulture. Mr. Crook had charge of the gardens, &c., for eleven years.

—— A SLIGHT error occurs in my note on NARROW VINE BORDERS, page 382, twelfth line from the top of the column, which I should be glad for you to set right in your next issue. Instead of "lime and broken bricks," it should read, "mixture of loam and broken bricks."—W. S.

—— "H. D." sends the following notes :—"During a recent visit to the well-managed gardens of the Earl of Cork, MARSTON HOUSE, FROME, I noticed some exceedingly fine Bouvardias, the plants being in 5 and 6-inch pots, and were bushy little specimens completely studded with buds, and will doubtless prove invaluable during the next few months for supplying abundance of their bright scarlet and snowy white blossoms, which are so effective when arranged with Maidenhair Fern fronds in the form of sprays and buttonholes. The double forms find most favour with Mr. Iggulden, who has evidently hit upon the right method for growing Bouvardias well.

—— "IN the same garden my attention was drawn to a most useful Fern which is not so much grown as it should be. I refer to ADIANTUM MUNDULUM. All who have a great demand for Fern fronds in a cut state would do well to secure a stock of this variety, the fronds of which are especially suitable for making sprays and buttonholes, being of the right size for that purpose, and stiff enough to be used without wiring.

—— "ON a shelf at the back of a stove was a fine healthy clean stock of CALANTHE VEITCHI, which had made extra strong growth, and promises in due time to yield a plentiful supply of their choice and beautiful blossoms. The plants were growing in a mixture of peat, sphagnum, and charcoal, as Mr. Iggulden finds they do not thrive in the loam he is able to procure, and although others may grow Calanthes equally well in loam, the condition of the plants at Marston plainly indicates that the treatment they receive suits them in every respect.

—— "SOME very fine fruits of HERO OF LOCKINGE and BLENHEIM ORANGE MELONS were ripening at the time of my visit, also a large example of a variety raised by Mr. Miller of Rood Ashton Park ; and although growing to a large size there is nothing coarse about it, the outline of the fruit being even and beautifully netted, and the variety will doubtless prove very useful for growing a few large fruits for special occasions.

—— "TOMATOES IN PITS are trained in a simple and novel way at Marston. Common hurdles are fastened about 18 inches from the glass, over the surface of which the shoots are trained at will. Treated in this way the labour of tying and training is reduced to a minimum, the fruits can be fully exposed to the light, and no further trouble is given in supporting the heaviest fruits."

—— POTATOES AND PEAS IN 1888.—My Potatoes were planted in the garden in the second week of April. The varieties were Webb's White Beauty, Perkins' Snowdrop, Improved Ashleaf, and Schoolmaster. The first-named turned out a splendid crop of good large tubers nearly all good. Perkins' Snowdrop were fine, but many of them were diseased. Improved Ashleaf were quite a failure both as to crop and diseased tubers. Schoolmaster, again, were not good with me, the bulk of them were bad. My soil is heavy and well manured. I planted Sutton's Fiftyfold, Beauty of Hebron, and Reading Russet in the field, and had a grand crop of each of them, but Reading Russsets were three parts diseased, Beauty of Hebron was one part diseased, and Sutton's Fiftyfold were the same. The soil is light on the top of a bank, and I should have thought was well suited to them because it allowed the water to run off the rows.

—— WITH regard to PEAS I grew twelve sorts — William I., Early Bird, Duke of Albany, Telephone, President Garfield, Fortyfold, American Wonder, William Hurst, Perfection, Yorkshire Hero, Wordsley Wonder, and Walker's Perpetual Bearer. The dwarf Peas with me ran up to 2 feet high, and were so thickly covered with pods, and we had such a wet season, that they never ripened, and I had to pull them up without getting a crop. All the earlier sorts were as bad ; they ran up to 6 or 7 feet, and the peas I had from them were not good. This Walker's Perpetual Bearer Peas, however, made up for. I have been picking pods with nine and ten peas in for the last month, and they have been bearing and blooming after being exposed to 10° of frost.—JOSEPH PALMER.

—— GISHURSTINE.—We are always reminded of the approach of "bad weather" by samples of this well proved and excellent dubbing for boots. Like the Gishurst Compound of the same inventor, it wears well and makes boots wear the longer for its application. Workers on

land and amongst manure, also young gardeners in houses whose boots are half their time wet, as well as all persons who have to pass through the slush of winter, may be reminded of the comfort and advantage they may derive by the systematic use of this cold-preventer and boot-preserver they have often seen advertised, and those of them who have not tried it are advised to do so, for it is good.

CONFERENCE PAPERS.

CANKER: ITS CAUSE AND CURE.

By Mr. James Douglas, Ilford, Essex.

This troublesome disease in fruit trees has very frequently been the subject of discussion in the gardening periodicals and elsewhere. Nearly every gardener has had to deal with it in his experience of the details of fruit culture, and as I had considerable experience of it some twenty-five years ago, in an old Essex garden, I may at least claim to bring it forward as a subject for discussion.

At the outset it may be taken for granted that it is absolutely necessary to ascertain the cause of a disease before any attempt can be made to find a remedy. The late Mr. Robert Thompson, author of the "Gardener's Assistant," and Superintendent of the Royal Horticultural Society's Garden at Chiswick, writes on canker with considerable diffidence. In the work above cited, page 381, he says: "The cause of canker is imperfectly understood, and so consequently is an effectual remedy."

His idea of the causes of canker, as summarised in his admirable work, are:—

I.—Sudden checks to the vegetation of the tree, especially in spring and the early part of summer.

II.—Derangements of the flow of sap from vicissitudes of heat and cold, as well as of moisture and dryness.

III.—Unskilful and severe pruning.

IV.—Vitiation of the sap by deleterious substances in the soil or subsoil.

V.—Dryness at the root doubtless gives rise to a species of canker, which manifests itself on the younger branches and on the shoots.

Referring also to Lindley's "Theory of Horticulture," page 110, it is stated that a Mr. Reid of Balcarras had shown "that one of the causes of canker and immature fruit, even in orchards, is the coldness of the soil. He found that in a cankered orchard the roots of the trees had entered the earth to the depth of 3 feet; and he also ascertained that during the summer months the average heat of the soil at 6 inches below the surface was 61°; at 9 inches, 57°; at 18 inches, 50°; and at 3 feet, 44°. He took measures to confine the roots to the soil near the surface, and the consequence was the disappearance of canker and perfect ripening of the fruit."

Another cause has been suggested—viz., insect agency. But this view of the matter will probably not be sustained by practical gardeners generally. That insects of various kinds, including that troublesome pest American blight (Aphis lanigera), will penetrate into the cankered part for shelter is likely enough. Indeed I can assert they do; but they are not there as the cause of canker, but because the cankered part affords a secure resting-place, which the smoother, healthier portion of the bark does not. Indeed I can also assert that cankered trees may be found in the garden with insects upon the affected part, and others near them also cankered with no insects upon them.

My contention is that canker is caused in two ways, and affects two different parts of the trees. Perhaps the most serious disease is that which affects the trunk or larger branches of the trees. This I hold is caused by the roots pushing downwards into cold, undrained, or unsuitable soil. The other aspect of the disease is that which lays hold of the twiggy portion of the trees, for even the one-year-old shoots do not escape. The immediate cause of this is probably owing to the rupture of the sap vessels by frosts, when the sap is in an active state. But I have a firm belief that the primary cause is also to be found in the state of the roots, which being in an inactive state owing to unsuitable soil, or their penetration to a great depth, prevents the perfect ripening of the wood, or maturation of the blossom buds in the autumn.

I come now to my own experience in our old garden twenty-five years ago. There were upwards of 100 trees of various sizes, some only a few years old, others 100 years planted at least. Most of them were cankered, and in places where the old trees had been removed and young ones planted canker showed itself in a few years.

The soil was light, over a gravel subsoil, and was naturally drained; the water did not stand on the surface for any length of time, even in very wet weather. I was confident that want of drainage had nothing to do with it, and that the fault was in the cultivation. Young trees seldom do any good planted amongst old ones, even if the soil has been well dug up and enriched with manure where the roots are to be placed. They require a wider and better field for their ramifications. I found I had to make gravel paths as well as fruit borders, and as most of the old trees were on the wane, and the young ones of but little value owing to their cankered state, it was thought best to remove them. But they were not all removed at once, as it was necessary to keep up a supply of fruit for household use. A space about 30 feet wide was lined off through the whole length of the garden, and was cleared of all trees and bushes. In the middle was a space 6 feet wide for a gravel path. The borders on each side, about 12 feet wide, were trenched where possible 2 feet deep, and we found the gravel cropped up in places within a foot of the surface. Where this was the case the gravel was taken out and used to make the path, the soil from the path being used to fill up the space from whence the gravel was removed. A good dressing of decayed farmyard manure was worked in with the operation of trenching, and as we could obtain good clayey loam a barrowload of it was spread out over 2 square yards, and 6 inches below the surface; a thin layer of decayed manure was placed on the ground before the loam. This was easily done as the work proceeded; one man could wheel in the loam and manure to two at work trenching.

When the work was finished we had a good gravel path with Box edging on each side, and the borders, through the trenching and manuring, were about 8 inches higher than the surrounding ground level. I had to plant the trees soon after the trenching was finished; they were Apples, Pears, and Plums on various stocks and in considerable variety. We planted them but 6 feet apart at first, and when they were planted a portion of good decayed turfy loam was placed round the roots. With this treatment, as might be expected, the trees made good clean growth even the first year.

As we manured rather too heavily by placing in two layers of fat stuff I thought it best to retrench the ground the next year, lifting the trees as the work proceeded. I found they had made a mass of fibrous roots into the loam, and when the trees were replanted again quite another barrowload of loam was placed round the roots, but no manure this time. However, round the roots of each tree some decayed frame manure was placed to keep the frost from them.

The trees made good clean growth again, and formed plenty of blossom buds. But I found 6 feet was too close even for Apple trees on the Paradise stock, and they had ultimately to be removed from 9 to 12 feet apart. In the course of the next ten years other borders were made, and in some cases the trees which were too close to each other were thinned out to furnish them. Many of the old cankered trees remained in proximity to the young ones for quite ten years, and with some two or three unimportant exceptions none of the young trees cankered. This shows, I think, if the disease had been caused by insects they might have travelled from the old diseased trees to the young ones. It was some seven or eight years before any canker appeared, and then only on the Dumelow's Seedling or Wellington. These trees were lifted, the canker cut out, and they were replanted again with fresh loam under and over the roots. The cut out portions soon healed over, and I saw no more of the disease.

The object I had in view was to encourage the roots up to the surface, and to keep and feed them there. The entire border quite close to the surface was full of roots, because it was not dug over, but merely scratched with a fork or hoe; and during winter and summer there was a thin layer of manure over it. Within the borders was the kitchen garden squares, well manured, to be cropped with vegetables, and the roots ran into this freely. We were well within the London fogs being less than seven miles of the Bank of England. In our new garden not much further out we had to do the same sort of work, but the soil was much better, being a medium clay of considerable depth, and nothing more was necessary than to trench the ground twice over in order to incorporate the top and bottom soil well together. We had to drain it, and find a good outfall for the water. In such a case the drains should be about 6 yards apart.

I have brought this subject forward as much in the interest of amateurs who own small gardens, and who do most of the work themselves as a relaxation from sedentary occupations, as in that of gardeners. It is quite true that some classes of soils are more suitable to fruit culture than others, but my experience is that some soils are condemned when neither the soil nor the climate, but the culture alone is to blame. Only the other day I met a person who has several hundreds of fruit trees in his garden, most of them young ones, and, a considerable proportion are showing canker on the larger branches. I examined the soil, and found that it had not been broken up more than 10 inches deep; and, further, all sorts of vegetable crops were planted

close up to the trees. This system of culture can satisfy no one, and it cannot be profitable. I fancy many good gardeners will bear me out when I say that want of preparation of the soil, and subsequent neglect of the special requirement of each class of trees, is the sole cause of canker.

Having found a cause, I would suggest the remedy. In the first place, it may be remarked that heavy clay soils nearly always require to be drained, and a free outfall provided for the water. Three feet depth of drain is sufficient, with a main drain at the lowest part of the garden 3 feet 6 inches deep.

Secondly, trenching, or at least stirring, the soil to the depth of about 2 feet is necessary. But I would not invariably throw the subsoil up to the surface, but would always stir up the bottom to the depth of 8 or 9 inches with a fork, and if the soil could be trenched twelve months before planting all the better.

In the third place, good healthy trees should be selected ; they ought to be carefully lifted, and planted as soon afterwards as possible. Care must be taken to keep the roots in a moist state from the time they are lifted until they are again in the ground. Spread the roots out carefully when planting them, and work the soil well in amongst them. Trees on the free stocks should be planted the same depth as they were before. Those on the Paradise and Quince stocks, or, in fact, any dwarfing stocks, should be planted to the union of the stock and scion. It is also of great advantage to the trees to have a mulching of decayed manure around the roots after planting; and if they are exposed to high winds, they ought to have some artificial support until they are well established.

Lastly, as to the pruning and training. I seldom do any pruning in winter. It is a more pleasant occupation in summer, and is a very simple operation, merely consisting in thinning out the young wood when it is too much crowded, and pinching off the points of any vigorous young growths that are likely to run out too far for the others. If they grow too much it is easy to dig round the circumference of the roots, and to cut underneath to sever any roots that are running directly downwards. This will be enough to throw any tree into bearing. To allow a fruit tree to form a thicket of wood in the summer, and then to cut it all off in the autumn, is the right treatment for a pollard Willow, but will not do for fruit trees of any kind. There should be more reverence for life in the mind of the pruner than for such reckless pruning to be possible.

It is quite time that a better system of fruit tree culture should be adopted in small as well as in large gardens. Why should amateurs purchase fruit when they can grow it themselves, and have all the pleasure as well as the profits? It is useless to sit down and blame the climate, the soil, or anything else, when the real cause is a bad selection of varieties, or bad cultivation. Let the old worn-out cankered trees be rooted out from old gardens, and their places be filled with approved sorts likely to do well in the neighbourhood, for each district has its special varieties.

Preparation of the ground by trenching and manuring is necessary, and whether the soil is light over gravel or a clay soil over heavy clay, the results will be satisfactory, and justify all the expenditure.

CULTIVATION IN JERSEY.

By Mr. Charles B. Saunders.

The Island of Jersey, being so noted for the growth and cultivation of fine fruit, especially Apples and Pears, I venture to offer a few remarks upon the modes of culture and the varieties cultivated, thinking they might be acceptable to the Committee, and also to the general body of horticulturists interested in the production of these health-giving and palate-pleasing fruits.

Jersey being the most southerly of the group of islands in the Bay of St. Michael's, and the slope of the land being from north to south-west, enjoys a very favourable climate ; the general moisture, owing to its position and the saline air, which almost always may be felt blowing over its surface, renders it particularly adapted to the growth of Pears. The soil is a good loam upon a substratum of clay retentive of moisture, which suits the Quince stock upon which most of the Pear trees are budded or grafted. There are localities along the coasts of which the soil is much mixed with sand, owing to the continuous drift in stormy weather, whilst some parts of the western side of the island are so much exposed to the Atlantic Ocean as to be entirely unfit for fruit culture and scarcely worth cultivating, the cereals and root crops growing upon them being very often subject to serious injury from the force of the westerly gales. Now it is easy to understand why the most protected and best sheltered situations are selected for the growth of the finest and best kinds of fruit. Apples are grown on the higher and drier parts of the island, where the land is stiff enough and the drainage good, hence the orchards, where the more ordinary kinds are grown for the manufacture of cider and general consumption, are generally surrounded by hedgerows from 5 to 8 feet high, and planted with Elm and other descriptions of forest trees. The Apple trees in these orchards are generally grafted 6 feet from the ground, and have spreading circular heads, which are perfectly beautiful when in bloom. Very many of us can recollect when the Weigelas of sorts were first introduced that their great recommendation was that they were as "beautiful as Apple blossoms." Were not Apple blossoms beautiful before then?

These orchard trees which make such a beautiful display of flowers, and produce in favourable seasons such an abundance of fruit, are much neglected, and allowed to grow in a confused mass of branches. To scientific horticulturists it seems a pity that, where Nature does so much, man should do so little in the way of pruning, so as to give the trees a more regular form and better appearance. You will, I think, gentlemen, agree with me that judicious pruning—*i.e.*, removing weak and superfluous branches, would have the good effects of improved appearance, more healthy growth, and finer fruit. The general character of the growth is so vigorous as to render it unnecessary to prune the extremities of the shoots, except for the sake of shaping the trees and balancing the heads, but "thinning out" is the style of pruning requisite.

The finer descriptions of Apple fruit are grown in gardens sometimes against the walls, on espaliers, or on the long cordon system. The dwarf cordon is not much practised, nor is it desirable, inasmuch as the growth, in spite of the Paradise stock upon which the trees are usually worked, becomes so strong that it requires constant cutting back to keep it within the desired limits, and this constant repression of growth is not conducive to fructification.

The finest Ribston Pippin Apples are grown upon south walls in sheltered gardens, trained upon the fan system. The strong radiative shoots being selected to form the frame of the trees, and the lateral and weaker branches being pinched and pruned off, so as to get fruit spurs to form. It is an excellent system, barring the disadvantage of the early maturity of the fruit. Very few other sorts are thought worthy of wall culture. The dwarf bush, the open standards, the rider or tall standard trees are all acceptable forms of garden trees, where the space is sufficient; and such varieties as Early Stibberd, Red Astrachan, Lord Suffield, Hawthornden, Red Quarrenden, Hooper's Seedling, Downton King, Golden and Walton Pippins, Grand Alexander, Cox's Pomona and Orange Pippin, Court of Wick Pippin, English and Dutch Codlins, &c., are grown freely on Paradise as well as other stock, and take but little space. It is not unusual to see crops of fruit considerably above the weight of the trees producing them. Planting Paradise stock Apple trees in rows 6 feet apart, and the trees at 3 feet apart in the rows, suggests a system of culture which might be made remunerative, and were it not for the constant changing of tenants from one piece of land to another, might be advantageously practised. It is not so here ; most of the fine fruit is produced on accidental trees, either found in gardens on taking possession, or planted by incoming tenants. Taking into consideration the time necessary to get a stock of trees into a good bearing state, few tenants would care to adopt any system of planting or training from which they would not derive some immediate advantage.

The cultivation of the Pear has been so very remunerative for years past that it has been made a subject of more general study and system. Many of the old gardens, established half a century or more ago, offer evidence of the walks having palisades on both sides, for the purpose of training Pear trees upon them, and in some cases the palisading has been double, so as to admit of trees being trained on both sides, 1 foot or less being the intervening space between the rows of palisades. Trees planted in this way are generally productive, the main lateral branches being trained and supported horizontally, a regular and continuous supply of sap is provided during the growing season for the development of the fruit. This system has and does answer well, and as long as the trees continue healthy they bear good crops of fruit, the size of which much depends upon the amount of thinning practised. Against walls, both horizontal, fan, and cordon styles of training are practised, all of which answer well in the hands of careful attendants. Dwarf bush and pyramidal trees are also grown, many acres of ground being devoted to the cultivation of the celebrated Chaumontel Pear. The great number of excellent varieties grown, and their exquisite though varied flavours, make the Pear a fruit of general acceptance, though few varieties are much grown. Citron des Carmes, Jargonelle, Williams' Bon Chrêtien, Louise Bonne, Maréchal de Cour, Beurré d'Amanlis

and Beurré Diel, Duchesse d'Angoulême, Doyenné du Comice, Chaumontel, Glou Morçeau, and Easter Beurré are more often met with than other varieties; and amongst culinary Pears the Belle de Jersey (Syn. Belle Angevine), and Catillac, or Pound Pear, are considered the best.

A rich, strong loam suits the Quince stock best, a lighter soil suits the free stock for Pears. The advantage of growing Pears on the Quince as a stock is early fructification, whereas the generally accepted axiom respecting Pears grafted on the free or Pear stock is, that—

"He who plants Pears,
Plants for his heirs."

There are but few large Pear trees on the island, occasionally one or two are met with, towering above the Apple trees in the orchards, but such trees are the exception; and land is so expensive in Jersey that no room can be spared for unproductive trees (which is the case whilst the tree is growing).

The Jersey farmer, cultivating 20 acres of land, and making a comfortable living off so small a surface, cannot afford to allow a single perch of it to remain unproductive, and every square yard is made to contribute towards the general expenses. The space allotted to kitchen gardening and fruit culture is generally near the homestead, the pathways being planted on either side by bush Apple and Pear trees, Currant and Gooseberry trees filling up the intervening spaces in the rows until the trees have grown sufficiently large to cover the whole space. These highly cultivated and richly manured pieces of ground are made to produce crop after crop in rapid succession. No sooner is one crop off the ground than another replaces it (organic, and not artificial manures being used). The trees get the benefit of these repeated dressings and the manipulation of the soil.

FRUIT CULTURE ON SMALL FARMS OR ALLOTMENTS.

By Mr. S. Rawson.

It is a well-known and acknowledged fact that spade culture pays, and pays well. An Italian proverb says, "The plough has a share of iron, the spade has an edge of gold." That land so cultivated is better for the digging and double digging, and more remunerative than larger holdings, which are susceptible only of the ordinary farming operations, goes without saying, as results have proved all through this country, and fact demonstrates again that hand labour is now as necessary to the tillage of the soil, at any rate in this country, as ever it was before the introduction and application of steam power to land culture, and that the profits from the cultivation of small holdings pay better than anything else, and for this reason that there is more attention paid to a small area of land of which the tenant has to take the benefit than is usually given to the large farms.

If the landlords would help their cottagers, or holders of, say from 1 to 10 acres of land, assist them by lending them their implements and tools, supplying them with seeds, and if necessary with labour, surely with the extra productiveness of the soil there would be extra profit, and it would be to the advantage of the tenant to share it with his landlord, and on the other hand to the latter a benefit to receive a consideration for the use of his money and implements, at the same time knowing that under the circumstances the value of his land was being improved.

So much for the assistance and opportunity to the small holder. Now as the disposition of his produce when grown. In this again his landlord might help him as the landlord at the same time might help himself. The landlord generally in fruit-growing districts is a man of means, able to send his produce to market either by road or rail as may be preferable to him. Not always having a full load, why could he not carry his tenants' small quantities to market if by road, or if by rail include them in the consignment of his own and save the small grower the difference in the rate of carriage between large and small consignments? There seems no reason why it should not be done, at any rate whilst railway rates are as they are. Upon an improvement in that direction the small cultivator may be able with good luck to get his goods to market at something like a reasonable tariff.

There is another way, as I have often pointed out, to enable the small growers to market their goods—*i.e.*, by a combination among themselves to make up, say a truck load for instance, to be consigned at their joint expense to market, instead of taking them by road. I am not now speaking of growers who attend market, and who have the means of transporting goods by road, but the "smaller fry" who cannot afford to go to market, and there are thousands who cannot, but who would be only too glad to turn their bit of land to better account but for the trouble and expense of sending to market, and of the indifference of their larger growing neighbours to accommodate them either by carrying their parcels to market or even buying from them, the former having too much on their own hands unsold to enable them to buy, and the disposal of their own goods occupying their whole time whilst the market is on.

In country districts, therefore, the Companies or Associations of which I have previously suggested the formation, could by their agents collect and provide the means of conveying in bulk the produce of small growers, and sending direct to the Company for sale in this manner save the cost of extra carriage. There is no need to remark upon packing in this instance, for the smaller the grower, my experience teaches me, the greater the care bestowed upon the picking and packing.

Coming to the question of collecting in country districts where the railway stations are far apart, I think the system of roadside tramways would be very useful. I remember some years ago finding one between Shipston-on-Stour and Stratford-on-Avon (Warwickshire) of great utility, and which obviated the necessity of sending by cart to a railway station about four miles distant (Moreton-in-the-Marsh). This made a vast difference to the small growers from whom a great portion of the produce was purchased, as having the means of sending the goods at a very low rate per ton, better prices could be paid for the goods if bought, or if sold on commission better returns might be made. In country districts the means of transport might be made much easier and cheaper by the adoption of a similar system at a trifling cost (in a primitive way) as that I have mentioned. For instance, nearly treble the weight of goods may be carried on tram lines by the same horse power than can possibly be done on the road by ordinary cart or waggon conveyance.

Another mode of transit is the parcels post, which certainly is a most convenient and speedy system, and especially useful to the ordinary consigner of small quantities, but the limit, 11 lbs., is too low to allow of its being generally beneficial to small growers. Taking the limit, 11 lbs. postage, 1s. 3d., and comparing it with the present rates by passenger trains, although a parcel of that weight may be sent to any place for 1s. 3d., still supposing that it has only to be sent thirty miles the railway company will take it and deliver it for 6d.; for fifty miles, 8d.; for one hundred, 1s.; for two hundred, 1s. 6d.; and for any distance above that 1s. 8d. So considering that most of the small parcels do not, as a rule, travel over the longer distances the advantages of carriage by the railway companies are eminently paramount. In considering this part of the subject I have not had regard to the "dealer's rates," which by passenger train would be about half the above-mentioned railway rates. I do not, however, see why the parcels post could not be more extensively adapted to the general requirements of the small growers. There is an existing staff, horses, vehicles, and everything to cope with the carriage of parcels of increased weight, and if the railway companies can carry 28 lbs. for 2s. 4d., why should not the parcels post, who have far greater advantages than ordinary consigners, give the public the advantage of part of the profit, and carry parcels of greater weight at reduced rates, even below those of the railway company, whose machinery they are bound to use? I may mention here once more the grievous subject of railway rates that I have recently had experience between home and continental rates of carriage. A short time ago I bought large quantities of fruit and vegetables at Lichfield, near Birmingham. I consigned 10 tons in one day, and I find that comparing the rates with those charged from Rotterdam or Antwerp for the same class of goods the carriage of one ton from either of the latter places at the same rate as charged from Lichfield to Birmingham, taking mileage into account, would amount to about £15 for fruit, and for a ton of vegetables, £8 15s. The charge from Lichfield to Birmingham per ton for fruit is 12s. 6d.; from Rotterdam, £1 12s. 6d. For vegetables, 7s. from Lichfield; from Rotterdam, 22s. Distance from Lichfield to Birmingham sixteen miles, and from Rotterdam to Birmingham about four hundred miles. This I can at once evidence by carriage notes. In noticing my small book, "The Producer and Consumer," Mr. Gladstone to whom I am much indebted for his remarks upon it at Hawarden, on the 23rd of August last, said, "That if truck hire were charged without classification at a mileage rate it would no doubt be a good thing for the growers, but that he was not aware that such a system had ever prevailed." I may say that it was certainly a custom years ago, inaugurated by my late father, in the Worcestershire district, and if again resorted to would be doing good to growers without in any way injuring the railway companies.

NOTES ON BIRDS.

It is a long time since I sent a note to the Journal, as it is easier to read the notes of others than to take part in the work but if all acted on the same principle the interest in the Journa would be much curtailed.

I have read the notes on birds on pages 390 and 391 with much interest, and as my experience, from careful observations, differs in some respects, perhaps I may be permitted to make a few remarks on the subject. Although I have not much sympathy towards sparrows in general, it is only fair to them that they should have their due as regards the good they do. I have read very many articles on sparrows and their doings, especially in *Poultry*, some months ago. I allow a few pairs to build around my premises (four pairs have been with me last summer, and some have been allowed to take off a brood of young) for purposes of observation, which gave me an insight into the food they took to their nests. I have no hesitation in stating that they destroy an immense quantity of caterpillars, grubs, insects, moths, and cockchafers, which they strip of legs and wings to feed their young, which is varied with corn and meal, particularly from the pig trough if obtainable. I was once much interested in seeing an old hen sparrow feeding—or attempting to feed—young wrens with pig food. The sparrow had been previously robbed of her own young ones.

During the past summer, when the caterpillar plague was in full swing—at the time it was difficult to find a perfect leaf on the Apples or Oaks—I watched the sparrows very carefully, and it was interesting to see them going to and from the Oaks. The barer the Oaks the more attracting to the sparrows. I walked quietly under the trees and watched how industriously they were tearing open the curled up fragments of leaves and taking out the grubs or chrysalis, with which they either fed the chirping fledged young with them or took them off to their young in the nests, as the case might be. As the sparrows cleared one lot of trees they went further afield, and I found them in large flights at least a mile from their homes, away out in the fields in the dried up and withered-looking trees with not a leaf left on them except the fragment which enveloped the chrysalids of the beautiful little green moths.

As regards nesting, I will not allow the sparrows to take the nests from the martins. If they persist in it they are driven into Elm trees where shooting will not matter, and down they come. I have known a cock sparrow bring home hen after hen, three in a day, until he had to fall. But I give them boxes in convenient places to build in—only a few—and then they are under control, and I generally give the eggs to children and not allow them to hatch. They continue to lay all through the summer. On one occasion I placed a brood of young sparrows in a cage, and found at least a score of cockchafers dropped into the bottom of the cage for the young by the old birds, and as the young were not old enough to peek, the insects were lost as food. These I have in my possession now. It would take too much space to particularise other useful birds as caterpillar destroyers.

As regards sparrows, swallows, and martins taking bees, as mentioned by Mr. W. E. Burkitt, I am very pleased to say such is not my experience, although I have watched them many an hour. On the other hand, I can assure readers that I have scores of times seen both martins and swallows followed by bees on the wing, for what purpose I was never able to satisfy myself, without it is curiosity, as seems to be the case when bees and wasps fly round persons without attempting to sting. My stock of house martins round the premises this season has been fifteen pairs, and nearly all have reared two broods each. The last only left me on the 17th inst., and, as is their custom, disappeared at once on leaving their nest. My swallows have numbered five pairs, and each pair reared two broods of about five each.

The first fieldfare of the season was here on the 26th of October; the redwings arrived on the 8th of October. Bullfinches are now catching readily in trap-cages, and a few cages in a locality would clear them out, or nearly so.—J. Hiam, *The Wren's Nest, Astwood Bank.*

LEDBURY APPLE AND PEAR EXHIBITION.

It will be in the recollection of some of your readers that a few years ago a series of Apple and Pear exhibitions were inaugurated by the Woolhope Club, ending in 1883 in the publication in 1885 of that splendid work, "The Herefordshire Pomona." To these the successful Exhibition, which was held in Ledbury on Thursday 25th, in a spacious tent 300 feet long, erected in the beautiful park of Mr. Michael Biddulph, M.P., may be described as an opportune sequel, and surely never more so than at the present time, when there is so manifest an awakening among our horticulturists, as the leader in last week's *Journal of Horticulture* so clearly establishes. Ledbury, according to its programme, started its exhibition with the particular object of agitating for a local market for its fruit, yet the general interest to the public cannot be over-estimated when we see so small a town can stage 3000 plates of admirable specimens of Apples and Pears, and hold a conference afterwards at which the leading specialists of the day read papers.

Fitly, then, as the prototype of many others throughout the kingdom, might the Ledbury spirited Exhibition be expanded into a Herefordshire Pomological Society on the lines of the Herefordshire Agricultural Society, and, like that flourishing Association, be peripatetic, visiting by invitation each of its leading district towns, thus diffusing its influence through fresh centres and increasing its funds. If this idea were carried out in our own county, with her 29,000 orchard acres, and adopted by other counties, each association being affiliated to the Royal Horticultural Society, it would be impossible to be too sanguine as to the beneficial results. A new industry would be created, quite on a national basis. Not only the amateur and the big nurserymen, but the small market gardener, an over-done and unprofitable speculation—in the provinces, at least—and even the small allotment owner with the vexed two acres and a cow, would then pay his way.

But I shall be reminded that I am travelling beyond the record. Peas, as may be supposed in such a season as this, were far inferior to Apples in quantity and quality, still there were some fine specimens to be seen in most of the collections. For the most level lot (open), six varieties, though wanting in size and colour, were shown from the famous cordon wall at Holme Lacey by Mr. Denning, gardener to the Earl of Chesterfield. The most notable were Pitmaston Duchess, Beurré Boussoch, Beurré Bachelier, Hacon's Incomparable, Madame Treyve. Second prize, Mr. W. Wildsmith, gardener to Viscount Eversleigh, who had fine Beurré Diel and Beurré Hardy; third, Mr. W. Child, gardener to Earl of Coventry; highly commended, Mr. Ward, gardener to Lady Emily Foley, and Messrs. Bunyard; and commended, Rev. C. H. Bulmer. The heaviest Pears were in this last collection, five Van Mons Léon Leclerc, weighing over 4 lbs. Single plates of Pears, six varieties (open), Marie Louise, first Mr. Robert Smith, second Messrs. Bunyard, third Mr. Walter Child.

Dessert Apples, not exceeding twenty-four varieties, Messrs. Bunyard first; Messrs. Cranston second; Mr. John Watkins third. In the winning stand the best were—Brownlee's Russet, Sturmer Pippin, King of the Pippins, Dutch Mignonne, and Cardinal. These were a fine collection and well coloured, but as a whole too large for dessert size. Many think differently, however.

Culinary Apples, not exceeding twenty-five.—Messrs. Cranston first; Messrs. Bunyard second; Mr. John Watkin third. This was a grand class. Among the best shown were Beauty of Kent, good colour; Lord Derby, Cox's Pomona, Mère de Ménage, New Hawthornden (exquisite colour), and Ecklinville Seedling, grand here and everywhere; Blenheim Pippin (not good).

The vintage fruit (Apples and Pears) were very large classes, and shown very clean and well and correctly named. Mr. J. H. Arkwright held an informal conference of farmers and cider merchants to agree on an outline of rules to lay before the Council of the R.A.S.E., on the subject of the prizes they propose to give for the best exhibits of cider and perry at their jubilee meeting next year at Windsor.

A conference of fruit growers was held during the afternoon, under the presidency of Mr. Michael Biddulph, M.P., when excellent papers were read by Mr. S. Rawson, fruiterer and salesman, Birmingham, on "Fruit Growing and Distribution;" Mr. D. Tallerman, on the subject, "What Ledbury Fruit Growers May Do;" and last, but not least, by Mr. W. Coleman, on "Profitable Fruit Culture in Herefordshire." All the papers were listened to with the attention their great merits deserved.

The Rev. C. H. Bulmer of Credenhill, and Mr. G. H. Piper of Ledbury, judged the cider and perry fruit; Mr. Miles (Wyeombe Abbey), Mr. Coleman (Eastnor), Mr. Crump (Madresfield), and Mr. Spencer (Goodrich Court) judged the dessert and culinary fruit; and Mr. Woolway of Bristol judged the cider.

The exhibitors who were present gladly acceded to Mr. Biddulph's suggestion that a choice selection from the best exhibits should be formed, and forwarded to Balmoral for presentation to Her Majesty the Queen.—The Herefordshire Incumbent.

DEVONSHIRE POMOLOGICAL SOCIETY.

October 25th and 26th.

At one time it was very doubtful if the Society would be able to hold its annual Apple and Pear Show, many of the growers who usually compete not having fruit sufficiently good to uphold their well merited reputation as cultivators. The Committee, however, and the energetic and courteous Honorary Secretary, Mr. J. T. Pengelly, had every reason to be well satisfied with the results of their labours. At the opening of the Show Sir Thomas Ackland, Bart., spoke at some length upon the benefits conferred by such exhibitions, and dwelt upon the efforts that are now being made to popularise hardy fruit culture. Sir Stafford Northcote and other gentlemen followed in a similar strain, and in all probability a still more instructive meeting or conference will be held next autumn. On the whole the Devonians have every reason to be proud of their achievements in Apple and Pear culture, as they fairly held their own against all comers. The Kentish Apples appeared to be more fully developed than the locally grown fruit, and it was generally thought some of them were grown under glass. There was no rule to exclude such, but they ought not to be mixed with open air fruit if the selections of the latter are to be of an instructive character. There were four lots of twenty-four culinary varieties of Apples staged, and with these Messrs. G. Bunyard & Co. were well first, having remarkably fine dishes of the leading sorts. The second prize was awarded to Mr. C. G. Selater, Devon Nurseries. Mr. D. C. Powell, Powderham, took the third prize for a highly creditable collection. With twelve culinary varieties Mr. D. C. Powell was first, his well selected collection consist-

ing of Gravenstein, Ecklinville, Blenheim Pippin, Mère de Ménage, Small's Admirable, Warner's King (very fine), Golden Noble, Brabant Bellefleur, Lord Derby, and Peasgood's Nonesuch, all large, clean, and even in size. Messrs. G. Bunyard & Co. followed closely, Emperor Alexander, Lord Suffield, and The Queen being the best dishes included in a generally good collection. Mr. C. J. Sclater was third, and three other creditable collections were staged. In the open class for twelve varieties of desssert Apples Mr. C. G. Sclater took the lead, having capital disbes of King of the Pippins, Blenheim Orange, Worcester Pearmain, Braddick's Nonpareil, Cornish Aromatic, Beauty of Wilts, Autumn Pearmain, Bibston Pippin, Gravenstein, Court Pendû Plat, and Cornish Gilliflower. Mr. D. C. Powell had an equally good selection, and was only two or three points behind. Among his were pretty dishes of Baumann's Reinette, Gravenstein, Blenheim Pippin, and Rosemary Russet. Mr. Berwick, Sidmouth, was third, and there were three other creditable collections shown. There were seven entries in a class for twelve varieties confined to private growers. Mr. R. Yeo, gardener to R. B. James, Esq., was first, his best being pretty dishes of Councillor, Worcester Pearmain, Ribston Pippin, and Blenheim Pippin, the rest being culinary varieties. The second prize was awarded to Mr. J. Garland, gardener to Sir T. D. Ackland, Bart., his collection including very good dishes of Striped Beefing, Winter Hawthornden, and Emperor Alexander. Mr. A. C. Williams, gardener to W. C. Sim, Esq., was a good third. For nine culinary varieties Mr. R. Yeo was first; Mr. J. T. Baker, gardener to Mrs. Rowe, second; and Mr. H. Hill third. Mr. A. C. Williams staged very good dessert Apples in nine varieties, and was first, the second prize going to Mr. H. Hill, and the third to Mr. J. Garland. The last named had a remarkably handsome dish of the American Mother. With nine mixed varieties Mr. E. Protheroe was first, his best being Bramley's Seedling, Adams' Pearmain, and Peasgood's Nonesueh. Mr. W. Mortimer, gardener to Col. White Thompson, was a good second, and Mr. T. Westlake third. Classes were provided for single dishes of Peasgood's Nonesuch, Alfriston, Blenheim Pippin, Dumelow's Seedling or Wellington, Golden Noble, Mère de Ménage, Warner's King, Adams' Pearmain, Cornish Gilliflower, Cox's Orange Pippin, King of the Pippins, Margil, Ribston Pippin, any other culinary, and any other dessert varieties, which attracted numerous entries. In these Messrs. Bunyard & Son gained three first and six second prizes, Messrs. A. Truman, A. C. Williams (who had four first and two second prizes), W. Blackmore, B. Brown, S. Hodges, and J. H. Mounsdon, gardener to F. Bradshaw, Esq., also being successful. In the class for any otber dessert variety Messrs. Bunyard & Son won the first prize with a handsome dish of Wasbington, which proved to be very crisp, juicy, and sweet. The first prize in a corresponding class for a culinary variety, Mr. S. Hodges was first for a fine dish of Loddington. Messrs. Bunyard and Son were the only exhibitors of three dessert varieties introduced since 1876, these consisting of Wealtby, Okera, and an unnamed variety. They were also first for three culinary varieties, tbese consisting of Bismarck, Belle Pouloise, and Royal Jubilee, all of which were of good size and attractive in appearance.

The competition was less keen with Pears generally, but many extra fine dishes were staged. Size rather tban quality appeared in several instances to bave most weight with the Judges, and the awards were rather severely criticised accordingly. Messrs. G. Bunyard & Son were awarded the first prize for a collection of twelve varieties, these consisting of Pitmaston Duchess, Durondeau, Doyenné du Comice, Beurré Superfin, Beurré Hardy, Maréchal de Cour, Beurré Rance, General Todleben, Beurré Clairgeau, Catillac, Grosse Callebasse, and Vicar of Winkfield, all extra large and even in size. Mr. C. J. Sclater followed, his best being Pitmaston Duchess, Beurré Diel, Louise Bonne of Jersey, and Marie Louise, while the third prize went to Mr. D. C. Powell, who had a capital selection, all well-grown dessert varieties, amongst which the most noteworthy were Pitmaston Duchess, Glou Morceau, Marie Louise, and Beurré Bachelier. The best six dishes were staged by Mr. H. Berwick, Sidmouth. Mr. C. J. Sclater was a good second, and Mr. A. Truman third. There were seven entries in the class for three varieties, and with tbese Mr. D. C. Powell was well first, having fine, cleanly grown well-ripened fruit of Beurré Superfin, Marie Louise, and Muir Fowl's Egg. Mr. J. Garland was second, and Mr. J. H. Mounsden third, the last named experiencing rather hard treatment. Messrs. J. Bunyard & Co. were the only exhibitors of three varieties of stewing Pears, and were awarded the first prize for five dishes of Beurré Clairgeau, Verulam, and General Todleben. Mr. Truman was first and Mr. C. D. Powell second for Catillac; and for any other culinary variety Mr. H. Berwick was first, staging a fine highly coloured dish of Beurré Clairgeau. Messrs. Bunyard were first and Mr. D. C. Powell second for Beurré Diel, both having good fruit. Many extra good dishes of Marie Louise were shown, and with these Mr. R. Smith, gardener to Lady Frances Fletcher, was first and Mr. Powell second. Doyenné du Comice also appears to be a favourite, and was well shown. Mr. A. C. Williams was first and Mr. Keliard, gardener to W. J. Battishill, Esq., second. Messrs. Bunyard had the best dish of Josephine de Malines, Mr. J. Garland being a good second. The best dish of Louise Bonne of Jersey was staged by Mr. W. Turner, gardener to H. W. Sanders, Esq., the second prize going to Messrs. G. Bunyard and Son. Mr. J. H. Mounsdon had a first prize for a good dish of Easter Beurré. Pitmaston Duchess was numerously shown, many of the dishes being extra heavy and well ripened. Mr. R. Dark, gardener to J. M. Miller, Esq., Barnstaple, was first, and Mr. A. C. Williams second. Mr. R. Smith was first for Winter Nelis, and Mr. J. Blackmore, gardener to C. T. D. Ackland, Esq., M.P., second, both having very good dishes of this popular variety. The best dish of Beurré Superfin was staged by Mr. R. Dark, the second prize going to Mr. D. C. Powell. In the class for any other dessert variety Mr. R. Dark was placed first for immense fruit of Souvenir du Congrès, each of which must have been upwards of 1 lb. in weight, and were said to have been grown against an open wall. Mr. R. Smith was second with good fruit of Doyenné Boussoch. Mr. D. C. Powell was first for Medlars, Messrs. Bunyard & Co. for Quinces, and Mr. B. Brown for Tomatoes.

The non-competitors' collections were numerous and extensive, and added largely to the success attending the general display. Messrs. R. Veitch & Co., Royal Nurseries, Exeter, lent a great number of decorative plants, and arranged much the finest collection of Apples and Pears. Of Apples they had about 100 varieties, among these being very good dishes of Bismarck, Lane's Prince Albert, Gravenstein, Blenheim Orange, Cellini, Peasgood's Nonesuch, Sandringham, Lady Henniker, Worcester Pearmain, Ecklinville, Winter Hawthornden, Grand Sultan, Tibbett's Incomparable, Bramley's Seedling, and Niton House. Of Pears there were fifty dishes, the best being Flemish Beauty, Brockworth Park, Marie Louise, Beurré Bachelier, Pitmaston Duchess, Glou Morçeau, Louise Bonne of Jersey, and Doyenné du Comice. Mr. D. C. Powell staged a large collection of Apples and Pears, all of which were well grown, the selection also being trustworthy. Messrs. Bunyard & Co., Mr. C. G. Selater, and Messrs. Lucombe, Pince & Co. also had good exhibitions of Apples and Pears. Local fruiterers arranged a remarkably fine display of Jersey Pears, these including numerous boxes of Glou Morçeau, Easter Beurré, Chaumontel, Belle de Jersey, and other extra large fruit. It should be added the Exhibition was held in Fore Street Market Hall, this being gaily decorated and illuminated for the occasion in a most effective manner by active members of the Committee.



HARDY FRUIT GARDEN.

When to Gather Apples and Pears.—It is unwise to bave a fixed time for gathering these, as it is possible to leave the fruit of some varieties too long on the trees, or what is still more reprehensible, it may be gatbered before it is fit. When left on the trees till ready to drop off at the least touch, a heavy wind may quickly clear the trees and spoil the greater portion of tbe fruit. Even if it is gathered only just in time, it not unfrequently happens that the quality is impaired by remaining too long on the trees, and a dry mealy fruit be the result, this being more especially the case with Pears. Should the fruit be gathered when it has to be dragged from the trees, tbe chances are the greater portion will become shrivelled and tough, losing greatly in value accordingly. As yet very few Pears have been gathered by experienced growers in the southern counties, and still fewer Apples. Nor should they be till it is found that the seeds are nearly or quite brown, another good test being that of raising the fruit out of its natural position. If unfit to gather they will cling to the tree, but if sufficiently ripe will part readily. The latter test is to be preferred for choice Pears, every fruit of which is of value. Severe frosts will sometimes injure the latest fruit, but these are not to be feared during October at any rate, those recently experienced, though severe, only serving to hasten ripening.

Storing Pears.—Such comparatively early varieties as Williams' Bon Chrêtien, Clapp's Favourite, Beurré Giffard, and Souvenir du Congrès, will have been gathered in most warm localities, but in all cases are not yet used up. It is a good plan to gather these or any variety that keeps badly or which it is desirable to prolong in season as much as possible at intervals of about a week, those first picked being forwarded in gentle heat. In all probability a great majority of varieties will require this assistance before they will become fit to eat, and in this case their season will be prolonged considerably. A portion of the crops of Beurré d'Amanlis, Pitmaston Duchess, Beurré Superfin, Fondante d'Automne, Autumn Bergamot, Beurré Hardy, Louise Bonne of Jersey, and Brown Beurré will in most warm localities have been fit to gather early in October, but all of these are much later than usual, and the bulk will not be stored before the end of the month. Very late also are Marie Louise, Urbaniste, Doyenné du Comice, Doyenné Boussoch, Maréchal de Cour, Beurré Diel, Gansel's Bergamot, Beurré Bosc, and other varieties usually gathered at this date (October 12th), and largely used in October and November, while the later Beurré Clairgeau, Thompson's, Van Mons Léon Leclerc, Huyshe's Prince Consort, Huyshe's Prince of Wales, Chaumontel, General Todtleben, and Hacon's Incomparable still cling closely to the trees. All these promise to ripen eventually, but such extra late varieties as Glou Morceau, Josephine de Malines, Beurré d'Aremburg, Beurré Bachelier, Winter Nélis, Beurré Sterckmans, Easter Beurré, and Nec Plus Meuris are still swelling, and it is doubtful if these will ever mature properly. Pears may either be stored in a single layer with their stalks uppermost on ordinary fruit-room shelves, or they may be carefully packed in drawers, these being left open for a few days or till such times as the fruit ceases to evaporate much moisture. Everything about them should be clean and sweet, and the fruit ought to be protected from currents of cold air and severe frosts when necessary.

Apples.—Beauty of Bath, Irish Peach, Quarrenden, and Summer Golden Pippin remained in season much longer than usual, and on the whole were good in quality. Kerry Pippin is now available, and a few King of the Pippins have been ripened artificially. Among culinary varieties Lord Suffield, Keswick and Carlisle Codlins, and Stirling Castle have done good service, and promise to keep well. The bulk of these are now fit for storing, and the invaluable Ecklinville should also be ready to gather. All these will keep fairly well, but the Duchess of Oldenburgh, another sure cropper, loses in weight and quality by being stored. Emperor Alexander, Cox's Pomona, Lord Grosvenor, Flower of Kent, Hollandbury, Lane's Prince Albert, Blenheim Pippin, Tower of Glamis, Lemon Pippin, Alfriston, and a few other good culinary varieties will be very late this year, all at present having quite white pips or seeds. It may now be found safe in some localities to gather a portion of King of the Pippins, Cox's Orange Pippin, Adam's Pearmain, Braddick's Nonpareil, Ross Nonpareil. Margil, Claygate Pearmain, Lord Burghley, and Blenheim Pippin, but in rather late districts very few of these are yet fit to store. All may eventually be stored in thin layers on fruit-room shelves, but will keep equally well, perhaps better, when fairly large heaps are formed. The less valuable orchard-grown fruit can be kept well in large heaps in outhouses or sheds, but they must be well protected from frosts. If spare rooms are utilised for the storage of Apples these should be covered with paper, this excluding frost, which will otherwise find its way up the crevices, even better than straw, and does not taint the fruit as does the straw. Paper is also the best protective material. In any case it is very unwise to store bruised or unsound fruit, and all should therefore be handled and sorted over carefully, and those damaged in any way kept apart from the rest for immediate use.

Simple and Good Method of Storing Apples.—In many gardens there exists a collection of Apples, and no adequate provision made for storing the produce. Very frequently the crops are comparatively small, or, say, do not exceed a bushel of each variety. The best course to pursue with these is to gather and store each variety separately in quite clean boxes, which may be bought or made at a trifling cost. None but quite sound fruit are suitable for this method of storing Apples, and these should be carefully gathered and stored, no matter how many layers deep, direct in the boxes or barrels used as a good substitute for the latter. The lids to be then put on and all be set in a dry room or outhouse, and protected from severe frosts when necessary. Apples thus stored must not be muddled about in any way, and if left alone will keep surprisingly well, their season being prolonged longer than by any other ordinary method of storing yet tried. Large heaps of orchard-grown fruit may be formed in the open, where they will keep admirably. The only essentials are careful handling and sorting over of the fruit, a well drained position, and a good covering of clean straw with an outer casing of soil. Funnels formed, either with drainage pipes or a wisp of straw, should be set on the ridge of the heap by way of an outlet for any moist heat generated by the fruit.

FRUIT FORCING.

Vines.—*Early-forced Vines in Pots.*—Where thin-skinned Grapes are required in April, they taking precedence of Lady Downe's and other late varieties, the house intended for their culture will now be ready for their reception, if indeed they are not already in position. The pots should be placed on stands or pedestals which will not give way under their weight or interfere with turning the fermenting materials used for supplying bottom heat, than which nothing answers better than bricks placed to the required height without mortar. Where weight and quality of crop are first considerations some turf should be packed against the pedestal, and the holes in the pots enlarged, bringing the turf up above these so as to be within easy reach of the roots, which will speedily follow the stimulating food with which the Vines are fed. For supplying bottom heat Oak leaves are the best, as they supply heat and moisture through the early stages of growth and rich stimulating food from their decay at the finish, when the fruit requires all the support that can be given. Take care that the heat about the pots does not exceed 70° to 75°. The canes should be allowed to fall in a horizontal position over the fermenting material until they have broken, and be syringed two or more times a day, but sufficiently early for the last time each day to allow of the canes becoming fairly dry before nightfall. If the Vines have not been shortened to the proper length and dressed with styptic they must not be shortened now, as bleeding would weaken them, and it is easy to disbud when they start. Black Hamburgh, Royal Ascot, White Frontignan, and Foster's Seedling are excellent kinds for early forcing in pots, to which may be added Madresfield Court, which requires liberal feeding until the berries show signs of changing colour, when a gradual diminution, combined with a dry atmosphere, is necessary to prevent cracking.

Earliest-forced Planted-out Vines.—The houses containing Vines from which ripe Grapes are expected early in May should be closed by the middle of the month, or if the Vines are young and vigorous and not subjected to early forcing before close the house at once, as they do not break so quickly as old ones that have been forced for a number of years. With a view of economising fire heat and to produce a humid atmosphere a good bed or ridge of fermenting materials, consisting of two parts leaves and one of stable litter, may be placed upon the border and turned at short intervals, additions being made as the heat declines. In the canes of old rods they may be tied up to the wires as soon as they are dressed, but young canes ought to be suspended in a horizontal position over the fermenting materials, where they can be well syringed with tepid water slightly warmer than the house, but it is well to allow them to become dry at least once in the twenty-four hours or at night. Keep the temperature at 50° to 55° at night and 65° on fine days, the temperature by artificial means in the day being 55° until the Vines begin to move. If the border is not in a thoroughly moist condition it must receive repeated supplies of tepid water, or liquid manure if the Vines are weak, so as to thoroughly moisten it through.

Succession Houses.—Push on the pruning as soon as the Vines become clear of foliage, also the cleansing, painting, and limewashing, carefully washing the Vines with soap and water prior to dressing with an approved insecticide. Presuming the Vines have been fairly free of insects, avoid the old-fashioned practice of peeling, scraping, and painting with a pigment of clay, soot, sulphur, and other substances, which is more calculated to protect the larvæ than destroy it; it is better to wash twice and preserve the bark, which is of incalculable value in holding moisture from the syringe, and aids the flow of the sap when they are starting in growth when excited by genial moisture and warmth.

Midseason Houses.—Those that still contain a few Grapes, Black Hamburghs or other thin-skinned varieties, may now be cleared, as the fruit will keep fresh in a cool dry room, and the Vines will derive great benefit from free exposure to the weather so long as it continues dry and mild. When thoroughly at rest Vines will not be injured by a little frost, but a sudden chill should be guarded against by drawing up the roof lights or closing the houses when the nights are likely to be wet or frosty. The Grapes should be cut with all the wood that can be spared for insertion into bottles of water, which should be soft, and a piece of charcoal placed in each, removing the old foliage, but do not shorten the wood that has been allowed to extend beyond the bunch. The Vines should have the laterals shortened or removed, and the growths generally cut back, so as to plump the buds, but it must be done gradually, particularly in the case of vigorous Vines which are disposed to make late growth, which should be checked by free ventilation constantly, turning on the heat by day, but shutting it off at night, only the temperature must not be allowed to fall below 50° at night, until the foliage affords indications of falling.

Late Hamburghs.—The atmosphere in which bunches of these are hanging cannot be kept too dry, only the temperature must not be too high or the Grapes will shrivel no matter how moist the border. A steady temperature of 50°, with a little warmth in the pipes and liberal ventilation on dry days, will suit them during the fall of the leaf, when, unless the houses are well adapted for keeping them, the bunches may be cut, bottled, and placed in the late houses.

Late Houses.—If late Grapes have not finished (and the glorious weather of September and October was truly a godsend) nothing will be gained by pushing the fires after the wood is ripe, as a high temperature now will not prevent the Grapes shrivelling nor when the leaves fall. Perhaps the most crucial test of the thorough maturity of Grapes is evidenced by Mrs. Pince, it being sure to shrivel if the Vines have not heat enough at the right time—*i.e.*, from the fruit stoning until the berries are thoroughly ripened to the shank. Well done it is one of the very best late Grapes for quality, but it has not done well this season with us. Where immaturity and consequently shrivelling is the result of overcropping, relief should be given the Vines by cutting a portion of the bunches at the earliest convenience, but where it can be traced to imperfect drainage or bad borders no time should be lost in getting out the old soil and laying the roots in new compost over rectified drainage. Highly finished Muscats hanging on Vines that have lost their leaves are liable to be tinged by exposure to bright sunshine, which, though weak in November, disfigures them to some extent, especially when grown for market. To guard against this, which is only needed in case of houses with large panes of glass, a single thickness of pilchard nets drawn over the roof will be a sufficient shading. If not already done Vine borders should have some covering placed over them that will throw off rain and snow. The inside borders will be getting dry at the surface, and should be covered with some dry fern or straw neatly spread over them, which will prevent the border cracking and its giving off dust, besides improving their appearance. Give daily attention to the removal of ripe foliage as it parts from the Vines, keeping the houses cool, dry, clear of plants requiring water, and thoroughly clean.

Cherry House.—The lights having been taken off the house, the trees having cast their leaves in doing so, and as soon as all are down prune at once. Cut back to within an inch of the base from the shoots started all those laterals which were made during the summer, and which have been stopped at about the fifth joint. It is not good practice to shorten any of the terminal shoots unless the trees have reached the extremity of the trellis, or when it is necessary to multiply the shoots another season. The trees should then be washed with a brush with soap and water, and may then have the branches tied together to save them from injury whilst the house is being cleansed and the walls limewashed. The latter should be made of the best fresh lime applied rather thinly, and is best with a little size to make it adhere firmly. Dress the trees then with an insecticide, train and tie them to the trellis. These matters being attended to all the loose material on the border should be cleared off, and any soil of an inert character that can be forked over and changed for fresh turfy loam of a calcareous nature or a sixth of lime rubbish may be added, then top-dress with 3 inches of partially decayed lumpy manure. If the borders are in the least dry they must have a thorough supply of water, but the lights having been off it will be necessary only in exceptional cases. Keep the house fully ventilated at all times excepting during frost until such time as forcing operations are commenced, which, to have the fruit ripe at the beginning of May, will need to be at the beginning of December.

KITCHEN GARDEN.

WINTER RADISHES.—In many cases it is a difficult matter to keep up a supply of Cucumbers, Lettuces, Endive, and other salad plants throughout the winter, but Radishes may be secured by all, and a few, when gathered daily, always give satisfaction. At present we are gathering the Red Globe in good condition. It will last into November, and the China Rose will then come in. The former are swelling freely, and therefore the last sowing made three weeks ago will be ready about January; but, as a rule, all Radish seed is sown too thickly. They come crowded, and the tops screen the roots so much that instead of bulbing they only remain thin and unfit for use. They will do this in summer, but they are more inclined to it in autumn and winter, and the rows or bed should be thinned before the plants injure each other. Every plant ought to stand clear of its neighbour, and when this arrangement is carried out in good time each one may be sent to table.

PROTECTORS.—Of late the weather has been excellent, but a severe frost may occur any time in November, and all should be prepared for this. See that a good supply of covering material is convenient to be used at an hour's notice. Bracken is our favourite protector for ground covering, and we often place it over framelights and handlights as well. We cut several waggonloads of it in the park, and store it in an open shed when it is dry, and we find it invaluable before the winter is over. When it is spread over the crowns of Salsafy, Parsnips, Radish, and Celery, it prevents the frost penetrating the soil and preserves the vegetation. Mats are also useful in this way, but only old ones should be used for ground covering, as the wet soon causes good mats to decay. They do not suffer so much on frames, and as a substitute for them we have had some light hurdles made and filled with drawn straw. These keep out a great deal of frost. Ashes keep the frost out of the soil remarkably well, and if a layer is spread along each side of the rows of any kind of roots the frost will not readily penetrate to them.

STORED ONIONS.—These are not keeping so well as in some former years. Some which appeared to be quite matured and likely to keep for many months have sprouted at the top. This is particularly the case with those that are thick in the neck, and as their growing produces a certain amount of moisture in the heaps the whole should be turned, and every one that shows any disposition to grow taken out. Spread the sound ones well out and admit abundance of air.

CAULIFLOWER.—As is usual at this season Veitch's Autumn Giant is heading excellently at present. As an autumn Cauliflower it is unique, but we find it turns in more quickly than it can be used, and as this may not be the case long, as a severe frost may check them, the surplus heads should be preserved. We have saved them from a slight frost for many days by half breaking some of the large leaves and turning them over the heads, but this does not check their developing, and when full grown or of good size the best way is to cut them with a good piece of the stem attached, trim the bulk of the leaves off and insert them in boxes of damp sand, leaf soil, or ashes in a semi-dark place where they will be cool but free from excessive damp, where they will remain good for three or four weeks. Care must now be taken that young Cauliflowers, plants in frames and handlights are not caught by the frost. Protect them at night when necessary, but do not be afraid to admit abundance of air to them on all favourable opportunities.

STORING CARROTS.—At one time in the growing season, about July, our main crop of Carrots showed indications of being attacked by grubs, but a sprinkling of lime from the gasworks was at once thrown over and soon washed in by the rain, and at the present time this crop is one of the finest we have ever had to store. They are large, well formed, and bear very slight traces of having come in contact with worms, and generally Carrots are good this season; but they should not be left much longer in the ground, as when rain saturates the soil it may cause many of them to make a second growth, and then the best of the roots will split. This should be avoided by lifting them at once, rubbing the bulk of the soil from the roots, and cutting the stems away. They should then be stored in sand or ashes, where they will be sheltered from wet and frost. As a rule we store them with their crowns projecting outwards, and when any show signs of growing the young growths can readily be brushed off. Late grown Carrots that are not fully grown now may be left in the ground and drawn as required, as they will not be harmed by the weather.

PARSLEY.—A supply of this should be kept in hand for the winter. It is in daily demand, and its failure is as much felt as any crop we know. Where the plants have grown luxuriantly many of the first formed leaves have become brown, and the whole of these should be cut off, washed clean of grit, and then dried. If hung up in bunches in the kitchen, or broken and put in wide-mouthed bottles, it will be found of much use throughout the winter for seasoning. Let the growths that remain on the plants be well exposed to keep them hardy, and should severe frost set in cover them with bracken, mats, or glass lights. Where there is a good little bed it is often convenient to place a frame quite over it. Should it be necessary to grow Parsley plants in pots they must be kept in a cool house or frame, as a close warm atmosphere does not suit them.

KIDNEY BEANS.—Both the Dwarfs and Runners in the open are quite over, and many of them were destroyed before they had finished flowering; but those under glass are growing freely, and they should be syringed on fine days, and the temperature in which they are growing should not fall below 65°. When grown in a low temperature at this season they are apt to assume a scraggy habit, from which it will be difficult to force them later on.

PLANT HOUSES.

Gardenias.—Cuttings that are rooted may be placed in 3-inch pots, in which they will make useful little plants for a good start early in the year. Pinch the shoots as they grow to induce them to branch. Cuttings may still be inserted, by which a considerable gain is effected over propagating in spring. When rooted grow them in an ordinary stove temperature. If gentle bottom heat can be provided all the better; this is not really necessary. Place the earliest plants in brisk heat and they will quickly swell their flower buds. The latest will do in a temperature of 55°; they are easier and more safely retarded now than when their flower buds have commenced swelling.

Ixoras.—Cuttings that are well rooted in thumb pots may be placed into 3-inch pots, in which they may be allowed to produce one good truss, or they can be pinched to induce them to produce two or more. If the latter it will be necessary to place them in 5-inch pots when they have filled the others with roots. Water these carefully as well as established plants, and do not administer water that is of a lower temperature than the house in which they are growing. Arrange the plants rather close to the glass, so that they can enjoy abundance of light to harden and ripen their wood.

Coleuses.—Keep these in a temperature of 60°, and insert cuttings in small pots at intervals of a few weeks where highly coloured little plants are appreciated for decoration. Cuttings should be rooted for this purpose in 2-inch pots; they will root freely enough on a shelf in a temperature of 60° to 65°. For this purpose only highly coloured varieties should be grown, and the cuttings should be strong and well furnished with large leaves at the base. They are ready for use directly they are thoroughly rooted, which saves time over inserting small cuttings, and then having to grow them on until fine foliage is developed.

Tradescantias.—Cuttings of the variegated forms of these should be inserted thickly together in 2 and 3-inch pots directly the stock plants have shoots long enough. These root freely in any warm moist position. Few plants look better than these when used with Mosses and small Ferns on the dinner table or any other position in which plants of this nature can be employed. The plants should never exceed 5 inches in height, therefore it is necessary to strike some every few weeks. Our stock plants are from cuttings inserted thickly in boxes, and for many purposes plants raised in boxes and lifted out will be found very useful.

Euphorbia jacquiniæflora.—Plants that are in a backward state of growth should not be kept too warm, or they will continue to grow and fail to flower satisfactorily. Expose them to full light close to the glass, and admit air daily when the weather will allow of this being done. The night temperature should not exceed 55°, which will bring the growth to a standstill. The wood will harden and flowers in plenty will be the result.

Centropogon Lucyanus.—Keep these plants in a temperature of 55° at night, and give air daily when the weather is mild. They are most effective for grouping when allowed to carry one or two good shoots only in 4 or 5-inch pots. These can then be so arranged when in flower that the flowering portion of their shoots will stand or arch well above surrounding objects. Plants with a number of shoots have a heavy appearance, and are too stiff and formal when trained round stakes.

THE BEE-KEEPER.

SECTIONS.

I AM sending you to-day, per parcel post, one of my new glass sections I have mentioned previously, filled and finished off by my stock of Punic bees between October 15th and 27th. This section is not up to the mark, as these bees soil their combs with propolis, or, in fact, anything sticky; still, it is better than I expected, and I consider very passable; in fact, I saw much worse at Nottingham Show with prize tickets attached. You will see that this section is not ornamented with anything; it is sufficiently beautiful in itself without any other manipulation.

Anticipating the inquiries as to what these sections will cost, allow me to state that I intend by drawings and instructions to put it in the way of every bee-keeper to make his own by the fireside in winter time with tools that will not cost more than 2s., and if he requires help and has any children over eight years of age he can let them make the sections just for amusement. If he prefers to buy them I think plenty will be glad to sell him a thousand ready cut for 10s. As for putting together, they can be done much quicker than wooden ones. Then see, too, how all stains and propolis can be cleaned off, crated, and sent to market in a style that no one can resist buying.

A noted authority recently said that glass was a most unsuitable substance to make sections of. Does this one look as if it was? I hope to show that glass is the best substance we have for sections, and wood one of the worst. In glass, the bees, as will be seen, readily fill up the cells next to it, as the walls are equal to wax ones for holding honey. In wood, instinct teaches them that it will absorb the liquid honey and so cause the combs to detach from

its sides, so they always leave a row of empty cells all round till the last; nor do they fill them until they have well waxed the wooden sides. To hide these defects, a host of contrivances have been brought out, many of which are patented.—A Hallamshire Bee-keeper.

[The section referred to arrived quite safely, the glass being made secure in position by fine wire, and the whole well packed in a wood box. The section is, as represented, well filled, neat, and even tempting in appearance. Obviously any person who can use a glass cutter can make sections of this kind and put them together quickly. Our correspondent should send samples to "A Lanarkshire Bee-keeper" and "Felix." They can be forwarded through this office if desired.]

BEES AS EDUCATORS.

EDUCATED EYES.

No sooner does a person become the owner of a colony of bees than he looks around to see what are the prospects of future gain. Heretofore he drove or rode along the highways, noticing the ruts, bridges, fences, and houses, but now his vision takes in a wider range. His observation is quickened, and trees, shrubs and plants have put on new life, as it were, to his enlivened faculties. From the first opening buds in spring until the last rustling leaf has fallen his interest never lags, as he constantly watches the opening flowers, and notes with pleasure the busy workers roaming over them in quest of treasure to storse in their hives.

NECTAR IN WEEDS.

What was to him once a useless weed, to be cut down with the scythe or whacked off with a hoe, is clothed in beauty, and becomes a priceless treasure. Whoever saw any beauty in the Figwort, or watched for the appearance of its tiny cupboard, looked down into their depths for the first appearance of sparkling nectar, but a bee-keeper? Or whoever saw any utility in Spanish Needles or Beggar-ticks? There is a bond of friendship existing between the bee-keeper and nectar-bearing plants, and they appear to spring up to greet him wherever he goes. The Indian calls White Clover "the White Man's Foot," and well he may, for its modest flower soon appears as the harbinger of peace and plenty.

SOILS.

The interest thus awakened in plants soon takes on a wider range, and extends to the soil. Seeds of Sweet Clover (Melilot) are scattered on gravelly soil, take root, penetrating deeply, keep it from washing and dying and add to its fertility. Dreary wastes thus become clothed with verdure, adding to the beauty of the landscape and yielding choice nectar, fit food for gods. On a recent trip of a dozen miles on the railroad we were agreeably surprised to find this plant growing luxuriantly nearly the whole distance, and some deep cuts were so covered with it that the soil could not be seen. It is to be hoped that the officers of railroads will appreciate the utility of this plant in keeping the soil from washing away and prevent damage and danger thereby, and foster its growth. I have seen the yellow variety of this plant growing on the borders of salt marshes on the shores of Long Island Sound.

MOISTURE.

Marshes and wet lands along rivers and watercourses come in for a share of attention by the bee-keeper. His eye quickly detects anything in the interest of his winged stock. If by digging a ditch and running off water the growth of favourite bee plants is promoted, it is done. He then benefits his neighbours as well as himself, for as the ground becomes dry Blue Grass and the Clovers will take root, thus promoting grazing for stock, and malaria will disappear. New plants will spring up as if by magic, the Button-bush (Cephalanthus occidentalis) growing in water. It seems as if the seeds of honey plants rattled from the bee-keeper's clothes. The seed of many honey plants is food for birds, which are our friends and co-workers in destroying many noxious insects.

EDUCATED EARS.

As seeing is cultivated by bee culture, so is hearing—even all the senses are quickened much better than they can be in a kindergarten. How soon the trained ear discovers the note of the robber, the sound of swarming, the piping of queens, the happy hum of plenty, or the sorrowful moan when the queen is lost. The sense of smell reveals the blooming of Apples, as also the opening of the fragrant Basswood, Buckwheat, &c., and reveals the presence of that terrible disease, foul brood.—Mrs. L. Harrison.—(*The Prairie Farmer*).

TRADE CATALOGUES RECEIVED.

Dicksons, Limited, Chester.—*Catalogues of Roses, Auriculas, Carnations, and other Florists' Flowers.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Cattleyas (*C. E. D.*).—The occurrence you notice is probably due to the strength of the plants. It is occasionally seen, but is not constant.

Dendrobiums (*Reader*).—A temperature not falling below 50° will suit the plants named until it is desired to start them for flowering. Let them have a sunny position, and very little water will be needed, only sufficient to prevent the growths shrivelling, and but little damping will be required on the paths—none in damp, cold weather. Water should be employed about the same temperature as the atmosphere of the house, and it is never wise to supply very cold water to plants grown under glass.

Pleiones (*Idem*).—They will flower well in the Odontoglossum or cool house, and the flowers last longer in a cool temperature than in a warm house, provided there is not too much moisture. The flower sent is P. lagenaria, and is one of the most free of the genus.

Areas of Glass Structures (*A Youngster*).—We have no record of the extent of ground covered with glass for growing fruit and flowers for market by different cultivators, therefore we cannot say whether Mr. Ladd's "glass area" is the most extensive or not. Possibly some of our readers may be able to give information on the subject. Our reply to your second question is, Write to the Curator, Royal Gardens, Kew.

Staging Chrysanthemums (*Inquirer*).—The regulation size of a stand for twelve blooms is 2 feet long, 18 inches wide, 6 inches high at the back, and 3 inches in the front. This you will find large enough if you elevate the Japanese blooms just sufficiently for the florets to show themselves in the best manner. A good deal depends on cupping the blooms, and on this and other details of staging you should study Mr. Molyneux's book, which can be had by post for 1s. 2d. from this office.

Land Improvement (*Justitia*).—Are you not somewhat late in your criticque? You do not name the persons to whom you suggest credit is due—a somewhat singular omission under the circumstances. It is quite certain that our correspondent had no intention of conveying a wrong impression, and equally certain that such an idea as you indicate could not be entertained by regular readers of the Journal who have been made well acquainted by special announcements (that you can scarcely have seen) with the circumstances of the case.

Tanks for Rain Water (*Subscriber*).—The size of tanks must obviously be determined by the rainfall of the district, governed also by the probable withdrawal of water for domestic and other purposes. A tank 12 feet by 11 feet, and 5 feet deep, holds about 4000 gallons. An inch of rain on an acre is about 23,000 gallons, and from this, and the probable weekly withdrawals, you will be able to ascertain the extent of storage to provide. There is another way of arriving at the matter. Assuming the rainfall is 24 inches, and you double your area, you have the amount in cubic feet. But is your area correct? It is not the roof surface, but the area of ground that the roofs cover on which calculations should be based, or a great excess will be presented. This is all we can say in the absence of sufficient data on the subject.

Fruit Trees for a North Wall (*Planter*).—As the Currants are not wanted Plums and Cherries may be grown. Morello Cherries would be more certain to bear and ripen well than dessert sorts, though we have no doubt good fruit might be had from these. All except the latest Plums would answer. We have had good crops of Czar, Victoria, White Magnum Bonum, Prince Englebert, Kirke's, Pond's Seedling, and Purple Gage, from trees against a wall facing due north, the second-named bearing most heavily. We should prefer covering the wall with diagonal cordons, planted about 18 or 20 inches apart. The space would be covered much more quickly than with fan-shaped trees, and the former are inexpensive. When you decide which form of tree you intend planting we will name some good varieties if you wish, repeating the length of the wall and aspect, as your letter cannot be preserved.

Petroleum and Vines (*F. A.*).—You say you have pruned your Vines, and "dressed them with petroleum in a pure state as purchased," for the extirpation of the mealy bug, and now ask whether the petroleum will injure the buds. We occasionally receive a letter of this kind that

causes us some astonishment. Over and over again safe methods have been recommended for cleansing Vines, and for preparing petroleum for applying to them strong enough to destroy insects, yet without risk of injury to the buds. Yet you have done what we have not recommended, and run the risk of seriously injuring the Vines. We have known Vines killed by a too frec application of petroleum, and others escape when the dressing has been light; and what the effect in your casc may be no one can tell. We hope, however, you will be fortunate, though you have read carelessly and acted precipitately.

Currant Trees Unfruitful (*M. C. B.*).—Young Currant bushes planted about five years ought now to be in a good state for bearing, but some gardeners have a plan of cutting the greater part of the shoots away annually, and with the shoots the crop of fruit they would bear the following season. Either that is your case or the buds have been taken by birds, for it is not possible to have Currant bushes five years unfruitful or with little fruit without something preventing. Root-pruning would certainly check the tendency to undue vigour, but it would be much better effected by allowing the bushes to bear fruit, which ought to be the case if the pruning knife be laid aside, merely using it to thin out overcrowded branches and remove irregularities of growth. We do not advise lifting, as it checks the growth and prevents the fruit swelling satisfactorily the year following. We presume the bushes have plenty of space, and are not shaded by trees or buildings.

Grubs Destroying Primulas (*G. H.*).—The grubs that we find with the plant are the larvæ of the destructive weevil, Otiorhyncus sulcatus. If the soil is infested with them they will almost certainly injure the other plants, and if they have entered the stems it is doubtful if they can be prevented doing further injury. You might try the effects of petroleum at the rate of half a wineglassful to a gallon of water, well agitating when used, proceeding experimentally on a few plants at first. Possibly they might not be injured by a stronger mixture, which you could try on one or two. Another remedy worth trying is to procure 2 ozs. of white hellebore powder, beat into a creamy paste with boiling water, then mix in a gallon of cold water for use. If you carry out these suggestions we shall be obliged if you will favour us with the results. All soil containing larvæ or small worms should be roasted by subjecting it to heat equal to that of boiling water, then moistening before use. This increases its fertility rather than otherwise. Watch for and destroy all the weevils you can find in the spring. They are most voracious, and apparently almost omnivorous, feeding chiefly at night.

Grapes (*W. Williamson*).—The Alicante berry is very large, but not typical; we have occasionally seen one or two berries on a bunch similar to the one sent, and apparently as large, but we neither measured nor weighed, so cannot say whether they exceeded 4½ inches in circumference or 5 drachms 2 grains in weight. The berry is round, or rather somewhat flattened instead of tending to the oval in shape, and contained six good seeds, which is an unusual number for a Grape to produce. We have seen larger berries of Gros Colman, also much better in colour and quality than the one you send. The discolouration on the white Grapes sent is not the ordinary "rust." Has there not been a slight attack of mildew, of which there are not wanting signs on the Foster's Seedling? Perhaps you have been sulphuring the pipes and the fumes have been too strong. Specks at the tips of Muscat Grapes are often caused by the remains of the flowers adhering to them too long, this being induced by a fully too moist atmosphere. We suspect you have kept the house too moist at times, and occasionally there has been a rather heavy deposition of moisture on the berries. There has been some little error in management somewhere, but as you withhold details of management we are placed at an obvious disadvantage in determining the precise cause of the discolouration of the fruit.

Beds in Flower Garden (*Weybridge*).—All that can be done in this case is to advance a few suggestions, excluding to meet the conditions Zonal Pelargoniums. The central bed might be filled as follows:—A good plant of either Ailantus glandulosus, Aralia papyrifera, Arundo Donax variegata, Rhus glabra laciniata, or a tall-growing Ricinus, the last named only being obtained from seed for the centre. Surround this with a broad band of Cannas, these being banded with either Cineraria acanthifolia or white Marguerites, a good edging of purple Beet completing the bed. Either of the tall fine-foliaged plants named would be very effective dotted among the Cannas, but it is only in extra large beds that such mixtures should be attempted. Another effective mixture for a large bed would consist of a central plant of Ricinus sanguineus, and at a good distance from this a ring of Ricinus Gibsoni. The groundwork or spaces between the Ricinuses to be filled in with either white or yellow Marguerites or single white Dahlia alba, the latter being kept pegged down. Next these may be planted a band of either dwarf variegated Abutilons or yellow Calceolarias, with an outer edging of Iresine Herbsti or dwarf Beet. Two of your half-circle beds might be filled with yellow Calceolarias or yellow Violas, mixed with and surrounded by Iresines, with a broad edging of either Cineraria maritima kept pegged down, Centaurea candidissima, or Stachys lanata. The other two half-circle beds could have a centre of Heliotrope, either mixed with or surrounded by a buff-coloured Calceolaria banded by a scarlet Verbena, with an outer edging, if the size of the beds permit, of Alyssum maritimum. The four outer beds also to be planted in pairs oppositely placed. Tuberous Begonias planted about 12 inches or rather less apart, the intervening spaces being filled with either dwarf blue Lobelia or Mesembryanthemum cordifolium variegatum with an edging of Golden Pyrethrum, would be effective and contrast well with beds composed of Chamæpeuce diacantha, mixed with blue Lobelia and edged with Alternathera magnifica. A rather pretty effect results from a mixture of early raised plants of East Lothian or earliest flowering autumn Stocks, and either Gaillardia picta or Gaillardia Lorenziana from seed, with an edging of dwarf Ageratum. Seedling Verbenas are suitable for the centres of dwarf beds, and a mixture of Fuchsias also takes well. We cannot give more definite advice without knowing what kinds of plants you have in stock or can raise or procure for the purpose in view.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*F. Keller*).—Doyenné du Comice. (*F. Smith*).—1, Beurré d'Amanlis; 2, Nouveau Poiteau. The cause of the cracking is the continuous wet summer. (*T. H.*).—1, Kerry Pippin; 2, Golden Pearmain; 3, Golden Noble. (*T. Stephens*).—1, Scarlet Nonpareil; 2, D'Arcy Spice; 4, Duck's Bill; 5, Allen's Everlasting; 6, Golden Reinette. (*J. H. H.*).—2, Maréchal de Cour; 3, Glou Morçeau; 5, Vicar of Winkfield; 6, Swan's Egg. (*Jno. Weaver*).—1, Alfriston; 2, Doubtful, perhaps an imperfect Blenheim Pippin.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Constant Subscriber*).—Echinops rutbenicus. (*G. Mantini*).—Pleione Wallichiana. (*R. O. and W. Bray*).—Pleione lagenaria. (*K. M.*).—Your questions cannot be answered this week. 1, Begonia natalensis; 2, Begonia fuchsioides; 3, Tradescantia zebrina; 4, Adiantum ethiopicum. (*Club Moor*).—A variety of Scabiosa atropurpurea. It is raised from seeds.

COVENT GARDEN MARKET.—October 31st.

Market very quiet, with no improvement in prices.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
,, Nova Scotia and Canada, per barrel	10	0		22	0	Oranges, per 100	4	0		9	0
Cherries, ½ sieve	0	0		0	0	Peaches, dozen	2	0		6	0
Cobs, 100 lbs.	70	0		75	0	Pears, dozen	0	9		1	6
Grapes, per lb.	0	6		2	6	Plums, ½ sieve	2	0		4	0
						St. Michael Pines, each	3	0		5	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	10		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	0	0		0	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	3	0		3	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100		0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	1	0		2	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonere, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	8
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	3	0		6	0	Mignonette, 12 bunches	3	0		6	0
Asters, dozen bunches	6	0		12	0	Narcissus (Paper White), 12 sprays	1	0		1	6
,, French, per bunch	1	6		2	6	,, (French) dozen bunches	4	0		9	0
Azalea, 12 sprays	1	0		2	0	Pelargoniums, 12 trusses	1	0		1	6
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	6		0	9
Calceolaria, 12 bunches	0	0		0	0	Pyrethrum, doz. bunches	2	0		4	0
Camellias, 12 blooms	3	0		4	0	Roses, Red, 12 blooms	0	6		1	0
Carnations, 12 blooms	1	0		2	0	,, (indoor), dozen	1	0		2	0
,, 12 bunches	0	0		0	0	,, Tea, dozen	2	0		4	0
Chrysanthemums, 12 bl.	1	0		4	0	,, yellow	3	0		6	0
,, 12 bchs.	6	0		12	0	Stephanotis, 12 sprays	4	0		6	0
Cyclamen, dozen blooms	0	4		0	9	Tropæolum, 12 bunches	1	0		2	0
Dahlias, 12 bunches	0	0		0	0	Tuberoses, 12 blooms	0	6		1	0
Eucharis, dozen	4	0		6	0	Gladiolus, 12 sprays	3	0		4	0
Gardenias, 12 blooms	1	6		4	0	Violets, 12 bunches	1	6		2	0
Hyacinths (Roman), doz. sprays	1	0		1	6	,, Parme (French), per bunch	3	6		5	0
Lapageria, 12 blooms	1	0		2	6	,, dark	1	6		2	6
Lilium longiflorum, 12 blooms	6	0		9	0						

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Evergreens, in var., dozen	6	0	to	24	0
Arum Lilies, per dozen	9	0		12	0	Ferns, in variety, dozen	4	0		18	0
Arbor vitæ (golden) dozen	12	0		24	0	Ficus elastica, each	1	6		7	0
Asters, 12 pots	4	0		9	0	Foliage Plants, var., each	2	0		10	0
Begonia, various, per doz.	4	0		9	0	Fuchsia, dozen pots	3	0		6	0
Chrysanthemum, doz.	4	0		9	0	Genista, per dozen	6	0		9	0
,, large, doz.	15	0		24	0	Hyacinths (Roman), dozen	9	0		12	0
Coleus, dozen	2	0		4	0	Lilium, various, doz. pots	12	0		21	0
Cyclamen, dozen pots	9	0		18	0	Marguerite Daisy, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Mignonette, per dozen	4	0		6	0
Erica hyemalis, doz.	12	0		24	0	Myrtles, dozen	6	0		12	0
,, gracilis, doz.	9	0		12	0	Palms, in var., each	2	6		21	0
,, various, doz.	8	0		18	0	Pelargoniums, scarlet, 12	3	0		6	0
,, viridis, dozen	12	0		24	0	Primula (single), per doz.	4	0		6	0
Euonymus, in var., dozen	6	0		18	0	Solanums, doz.	9	0		15	0



ONE-SIDED FARMING.

Rushing to extremes has been the characteristic of very much of the practice of many British farmers under the heavy cloud of depression which has been hanging over them of late years—we might say for the last decade, and we doubt not that many of them have had bitter reason to regret such action, for however desirable a change of the recognised system of cropping might appear for the moment, the result has almost invariably gone to show that the growth or non-growth of this or that crop affords no real or safe remedy for low prices. Take, for example, the Barley crop. In the great corn-growing district of East Anglia Barley has been turned to as the last resort of the corn-grower; and in what sort of position is the exclusive grower of Barley this year? We may turn to our own practice for an answer, for although we have all along continued growing a fair proportion of Wheat, yet we have tried to have full and fine crops of Barley. To achieve an end so palpably desirable, simply because it must certainly prove profitable if the grain could be matured and sowed in good order, we have spared no pains or expense in the process of cultivation and in obtaining good seed. But under the adverse influence of bad weather our best crops of Barley this year were beaten down by rain and wind; the grain is thick-skinned and discoloured, and it is only by the superior bulk of the crop that we can obtain a profit upon the sale of the low-priced grain. Sure enough our efforts are handicapped by the uncertainty of our fickle climate.

Well, we are wont to tell this to one another, perhaps with a sort of vague feeling that this uncertainty, this fickleness, is peculiar to our climate alone. But is it so? It may afford many a crumb of comfort to know that there are such things as drought and famine in India; of destructive frosts, drought, and excessive moisture in America. If proof is wanted, we have it at hand from one of these great corn-growing countries in the pages of a contemporary, which tells by the pen of a resident farmer in Canada West, of "the complete failure of the winter Wheat crop in Canada and many States of the Union—a failure aggregating many millions, not of bushels, but quarters. Since then the situation has been much intensified by the great spring Wheat crops of the Western States and Manitoba following suit owing to early frosts. In truth, early frosts at the end, late frosts at the beginning; a destructive drought in one section, and a super-abundance of moisture in another, have so curtailed and nibbled away our usually enormous Wheat crop, that, for export, only a mere modicum of it, as compared with year 1879-80, remains. This is no pessimistic exaggeration, but a simple matter of fact.

"Whilst the farmers of Eastern Ontario, their crops licked up by a burning sun and cloudless sky, were selling off their milch cows to Yankee speculators at from 30s. to 48s. per head, the inhabitants—French Canadians—of Quebec watched their crops rot upon the ground amid continued rainstorms, and the recent settler of Manitoba and Dacotah, in somewhat ignorance or necessity, seeding late—aye, and old settlers seeding early too—beheld to his chagrin and bitter disappointment the complete destruction in some instances or severe injury in others of a most promising Wheat crop before the magic wand of the ice king." Tempted by the price of Wheat in this country the farmers of America have very generally been guilty of one-sided farming in growing Wheat to the exclusion of all other crops. For a while this answered well enough, but the inevitable reaction has set in, and many of them are practically ruined. Nor have they been alone in such mistaken practices. In this country, to take one among several examples, we find some Hop-growers uprooting Hops by hundreds of acres under the low prices of the last few years, while others have kept steadily on doing their utmost to obtain a full crop of Hops of superior quality. A Sussex farmer and skilful brewer who has done so says he still believes in Hops when well grown and finished for market a fine bright sample. Such Hops must be had to brew and hop-down pale ales, especially for the export trade. His crop this year averaged 7 cwt. per acre, and he got £8 per cwt. or £64 per acre; assuredly he has reason still to believe in Hops. He is a remarkable example of what is possible in farming when the farmer is a living embodiment of industry, combined with sound practical knowledge, good sense and energy. His holding is only 100 acres in extent, but in that limited area are to be found remarkable examples of successful practice in the dairy, and with poultry, Hops, fruit, corn, roots, and green crops a fair proportion of each is seen thoroughly well done, and the excellence of the produce commands a speedy sale and profitable remuneration.

WORK ON THE HOME FARM.

So dry and hard is some of the land required for Wheat-sowing that ploughing cannot be done till we get some rain, at any rate not by horses, and those heavy land farmers who have the advantage of steam tackle are indeed fortunate. As yet we have only been able to sow some 20 acres of Wheat, and with that the seed germination is going on satisfactorily. Of course the dry weather has been a real blessing, and it must not be forgotten that there are no such things in this world as unmixed blessings. We are getting the Mangolds together in excellent order, and the work of carting to the clamps is so light upon the dry hard surface, that never was the work done better. We have already seen several flocks folded upon Swedes, and the sight has set us thinking about food prospects for next spring. Of course a heavy Mangold crop will then be available, but it is as well to have a good breadth of Swedes for the ewes and lambs to be folded on, to be followed by Barley, and to use Mangolds later on upon Rye and pastures. The first sown Tares are now well up, a full strong plant, and the Rye is also just visible. With us, our readers well know, both these crops hold a high position for spring feeding, and we shall have one more sowing of Winter Tares now for use in early summer. A field of seed Tares is also very profitable, and those who have a well ripened sample for sale now find it answer well. We know many farmers who object to seed Tares as being an exhaustive crop, but that is a matter easily set right. It is an excellent rule to apply manure to the land for every crop. No doubt this plan appears extravagant, but in reality it is not so, for with the land once brought into a thoroughly fertile condition very moderate applications of manure with each crop are sufficient.

Nothing can be more suicidal on the part of a farmer than to impoverish the land. Said the late tenant of a small farm of 90 acres, which has fallen upon our hands this Michaelmas, "If only I could have got £10 a year out of the farm I would not have left it." Now, we are bound to make it answer, and we shall do so next season, for we can say to his credit the land is fairly clean, but it is very poor, and this can be set right by a liberal use of chemical manure, and we have already got 300 sheep upon the fields.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. October.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain.
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 21	30.447	39 8	39.3	N.E.	44.1	57.1	32 4	76.8	26 2	—
Monday..... 22	30.472	45 6	44.2	N.E.	43 8	53 9	38 9	69.7	29.7	—
Tuesday 23	30.337	40.3	40.3	S.W.	43 9	49 2	33.1	69.1	28.4	—
Wednesday.. 24	30 153	37.1	37.1	S.W.	43 6	53.0	35.2	63.3	31 5	—
Thursday 25	30.001	53.6	51.2	S.E.	44 0	62 2	37 0	90.6	35.3	—
Friday 26	30.073	58.6	57.5	S.	45.4	63 8	35.4	73.4	46.7	—
Saturday 27	30.266	60.6	58.5	S.	48.8	68.8	57.8	99.3	52 1	—
	30.250	47 9	46.9		44.9	58.1	41.1	77.5	35.7	—

REMARKS.

21st.—Fine and bright throughout.
22nd.—Fair morning, bright day.
23rd.—Slight fog early, fine day.
24th.—Fog, gradually decreasing, in morning, fine afternoon.
25th.—Warm with occasional sunshine, but generally cloudy.
26th.—Dull and drizzly early, cloudy day.
27th.—Overcast early, fine warm day.

Another rainless week, but with sudden return of mild weather, the maximum on Saturday reaching 68.8°. The weekly averages being nearly equally based on the cold and on the warm portion have come out near the average. G. J. SYMONS.

THE CAMPAIGN.

THE annual friendly contests amongst the growers and admirers of the Chrysanthemum have commenced in earnest, and despite the forebodings, which the unfavourable season to a great extent justified, the results so far have been very satisfactory. The blooms have been shown in large numbers, and the quality generally, especially in the Japanese, exceeded expectations, the incurved, though late, creditably displaying their refined characteristics. The chief difficulty growers have experienced recently has been in preserving the earlier blooms, as a most discouraging tendency to damping in the lower florets has been developed by the rains and fogs. Some who have tried to hasten their plants too much are likely to realise the fact that a mistake has been committed, but it is quite excusable, especially with beginners, as only a week or two since it seemed impossible that certain exhibitors would be enabled to enter the lists at the early shows, though they have since done so with considerable satisfaction to themselves.

It is astonishing how rapidly the societies and exhibitions devoted mainly to Chrysanthemums increase in numbers, and if any doubt were felt respecting the popularity of the "Autumn Queen," it would be effectually dispelled by an inspection of a list of shows for the present month. The season really began with the last day of October, when a successful show was held at Havant. This was followed by one at Southampton on the 1st inst., where the competition was exceedingly keen. The busy time was commenced this week, reaching the culminating point next week, and gradually declining to the end of the month. Thus a total of over ninety shows have been announced, and taking the three principal weeks, the numbers are—November 5th to 9th, fourteen shows; November 12th to 17th, fifty-four shows; and November 19th to 24th, twenty shows, the last of which we have any information being Eccles on November 30th and December 1st. With regard to the days of the week upon which the shows are held there is a marked preference for Tuesday and Wednesday, twenty-six being fixed on the former and twenty-seven on the latter; the others being Monday 3rd, Thursday 21st, Friday 11th, and Saturday 4th, the first and the last being evidently in very little favour. On Monday, November 13th; Wednesday, November 14th; and Thursday, November 15th, the greatest number of shows will be held—*i.e.*, sixteen each on the Tuesday and Thursday, and fifteen on Wednesday.

Some of the leading shows have already taken place—such, for instance, as Kingston-on-Thames on Tuesday, where the fifth 25-guinea challenge vase was competed for, and won for the first time by W. Furze, Esq., Teddington (gardener Mr. Coombs), the Exhibition being as full of interest as usual, both as regards numbers of entries and quality of exhibits. Then followed the National Chrysanthemum Society's Exhibition at Westminster on Wednesday (and to-day), and where, apart from the numerous substantial prizes and medals offered, the national competition amongst Chrysanthemum and Horticultural Societies for a challenge trophy and prize of £10 excited considerable interest by its novelty. The Exhibition throughout amply maintained the credit of the Society by which it was provided. The Portsmouth Show opened on the same day (Wednesday), but continues until Friday, a silver cup, valued £25, constituting the principal prize, but the Show is always a large and good one in every respect.

The Ancient Society of York Florists will have an Exhibition in the Fine Art Building, York, on November 14th, 15th, and 16th, when two £5 silver cups will be offered for plants and blooms. The Kent County Society, though very youthful, merits notice for having made a step in the right direction, that of forming county societies. It has been reasonably advocated that in many cases an amalgamation of small local societies in one representing the county in which they are situated, would be a mutual advantage, and it is probable that this will be carried out more generally in the future. In some instances it might not be advisable or practicable, but it would be beneficial in numbers where two or three societies in a small district suffer both in funds and exhibits by their unnecessary competition.

The first provincial show of the National Chrysanthemum Society at Sheffield is being looked forward to with the deepest interest, and it is anticipated that the contest between northern and southern growers will prove one of the best of its kind yet held. The Show and the Conference where the "authorities" will discourse on various matters of importance, will undoubtedly attract large numbers of horticultural visitors, who may assure themselves of a hearty Yorkshire welcome. The most interesting class will be that for a representative collection of blooms, the first prize being a 15-guinea silver cup and £10 in cash. The conditions under which this prize is offered are very easy, and the competition ought to be keen, as the two other prizes are of substantial amounts—namely, £6 and £4. The sections, or any part of them to be represented, are incurved, Japanese, reflexed, Japanese reflexed, large Anemone, and Japanese Anemone, the first two in twelve blooms, distinct varieties, the others in twelve blooms of not less than six varieties, or more than two blooms of one variety.

The Birmingham Show is fixed for November 21st and 22nd, a liberal schedule being provided to insure what is usually obtained—a good representive Show. The Liverpool Show will be held on November 20th and 21st, and a fine characteristic display is expected. The great northern Show at Hull takes place on November 22nd and 23rd, and another silver challenge vase value 15 guineas is offered for a collection of blooms. A 10-guinea challenge cup is also contributed for a group of Chrysanthemums and a piece of challenge plate for a table decorated with Chrysanthemums, with liberal prizes in all other classes. The Shows named are only a few of the more important, but the districts represented by shows extend from Penzance to Scotland and Ireland, so that the admiration of the plant is not confined to any particular portion of the kingdom, and we frequently hear how societies and shows of a similar character are increasing on the Continent and in America, especially in the latter country.

Already a proposition of a singularly interesting character has been made with respect to next year, and it is worthy of the immediate attention of Chrysanthemum lovers. It is believed that in 1789 the large flowered Chrysanthemum was introduced to European cultivators, and it has been suggested by Mr. W. Holmes that 1889 would be a fitting opportunity for celebrating the centenary. A series of shows or a great Chrysanthemum fête might be rendered an important and highly attractive gathering next November. But to insure the attention and success such a scheme would merit it should be taken in hand at once, and the best method would be to appoint a committee to consider the matter and receive suggestions. A programme of some kind ought to be considered before the show season has concluded this year—say at Sheffield—and growers would then have ample time to prepare. If well started there would be no doubt about the support obtainable. If it were possible to grow a large collection of varieties carefully and experimentally with a view to comparison and determination of synonyms, a most valuable service would be performed. The work of comparison might well be undertaken by the Floral and Catalogue Committees of the National Chrysanthemum Society, and the only difficulty seems to be providing for

the cultivation of so large a number of plants, but we think this might be overcome, as several are favourable to the idea who could assist materially in its furtherance.

THE WEATHER AND SOILS.

THE past summer will long be remembered by gardeners as a most trying and perplexing one. In the spring grave doubts were entertained that we might have a repetition of the previous summer's hot dry weather, as perhaps there was hardly ever known a drier seed-sowing time; so dry, in fact, that the work at that busy season was greatly retarded, and the proper germination of seeds generally was a matter of serious consideration, when so much depends upon warm genial showers at that season to give all vegetable life a good start, so essential for securing successful crops. However, our anticipations were greatly upset, as the following months proved a striking contrast to the same of last year. Week after week nothing but dull sunless days, with heavy rainfalls and cold nights, the effects of which are now easily traced in our fruit crops. Soft fruit, such as Raspberries and Strawberries, were soon over, and those that were obtained were mostly deficient in merit. The cold nights were greatly against Apples and Pears swelling freely, while the sunless days prevented the fruit attaining a good colour, and in many cases a good flavour, though the fine weather of late has done much to improve matters in those respects.

The effects of the past season upon the fruit crops is not so much the subject of my remarks as the effect it has had upon the soil. Though we may have had what might be termed a wet summer, the soil in many places a few inches below the surface was, quite recently, as deficient of moisture as it was last season at this date, at least such was the case in this neighbourhood. The land received such a thorough parching last year, followed by an unusually dry winter, that the rain has been absorbed on the surface, and much is needed to penetrate thoroughly to what I may call tillage depth. This has come forcibly under my notice the last few days. We are preparing land somewhat extensively on this estate by trenching, with the object of planting later on. In each position where the soil has been broken up the second spit was so hard and dry that the pick had to be constantly employed, and to use the men's own words, "It's as hard and dry as though a fire had been under it."

Another case under notice was in removing Peach trees from outside walls to a late Peach house. It was surprising to see the state of the soil, in spite of frequent waterings and syringings during the summer. This points in a very forcible way how misleading and dangerous a summer like the past might prove to fruit trees by trusting to outward appearances only, especially to trees that are growing under what I may term unnatural conditions, such as small trees and Vines in restricted borders. It is the practice of some to cover outside Vine borders at this season to protect them from winter rains and snow; a wise course, no doubt, in some cases, but if adopted this year without a thorough examination of the border to some depth, the evil, I believe, will be shut in instead of being kept out. Over-dryness at the roots of Vines or any fruit-producing trees is as injurious at the present season as at any during the year, by producing premature ripening and fall of the foliage before it has carried out its proper functions in drawing up a sufficient quantity of sap for the proper development of the buds for future fructification. I have known Vines that have not been all that could be desired to have suffered from over-dryness of the border, while the evil has been attributed to a cold wet one, but upon a thorough examination, the moisture for a few inches on the surface has been misleading, the bottom half of the border being as dry as dust. This is greatly brought about by trusting too much to the natural rainfall, or by watering in driblets, forgetting that Vine borders are mostly provided with artificial foundations to secure thorough drainage. This being so, the ordinary rainfall cannot possibly be sufficient to keep the roots in a proper state of moisture, as apart from the great quantity of water a Vine requires to insure perfect health, there is sometimes this over-drainage going on, besides evaporation by the sun and air acting on the border. The more elaborate and expensive the formation of the border is, the less chance is there of its being a successful one, unless time and attention can be bestowed in copious waterings.

It is most important that an accurate register of the rainfall be kept in all gardens, as this is of great assistance to the cultivator; in fact, without such a guide one really works in a haphazard way, as sometimes a shower is very misleading, often appearing more than what has really fallen, and though at times we may have 1 inch of rain—a heavy fall for twenty-four hours—still, when we come to reckon it up, it is not such an enormous quantity for a border 3 or 4 feet deep, full of roots, and thoroughly drained; in fact, during the growing season, it is almost impossible to overwater such borders. To neglect giving them sufficient is a sure way of driving the roots out. If they cannot find their natural requirements in the border, especially moisture, they wander in search of it. The consequence is the roots suffer from cold more than from over-moisture—or the two together—the result being inferior Grapes, and the expense of forming elaborate borders is thrown away. Not only are Vines often misjudged in this way, but also fruit trees trained to walls and buildings. These sometimes receive a check during the year from insufficient moisture at the roots, thereby doing secretly an amount of evil which is irreparable the following season.

These remarks are made with the view of throwing out a hint that though we may have the past ungenial summer fresh in mind, we must not be led away with the idea that sufficient rain has fallen to supply the wants of our fruit trees, especially those growing under what I term artificial conditions, such as alluded to above, when perhaps the soil is in a perfect state of dryness, and it would be a wise course for anyone to examine their fruit borders thoroughly, to see that the past perplexing season has not been misjudged, and thus guard against serious results.—R. PARKER, *Impney.*

FORCING LILY OF THE VALLEY.

I HAVE often heard those soliciting orders for Lily of the Valley roots assert that they could readily be forced into flower by Christmas, but if this statement is not misleading in all cases it certainly is in a great many, as it is only with exceptional facilities that Lily of the Valley can be forced into flower in December, or indeed in January. Some hundreds of crowns or scores of roots may be placed in to force for flowering before the new year, and some of them may produce a few sprays by that time, but a dozen spikes from as many clumps cannot be regarded as successful, and I am of opinion that Lily of the Valley cannot be had satisfactorily, as a rule, until February and onwards. I make exception in the case of places specially constructed for forcing for market, but my remarks apply to the majority of private gardens and almost all amateurs. I have known gardeners to be told by their employers that they had seen "such lovely Lilies of the Valley from Covent Garden" the latter part of December, and some of them could not understand why it was not being produced at home at the same time. This is easily explained—first by stating that Lily of the Valley is one of the most difficult of all plants to force at midwinter, and, secondly, it is only in very few gardens that the forcing appliances are so good as to be able to accomplish it. Buying "specially selected crowns" is often held out as an inducement to secure early flowers, and good crowns will blossom before weak ones, but the best crowns count for very little where the forcing appliances are deficient, and no one need run away with the idea that if they only buy the best of crowns flowers will be secured at any time. I never mislead anyone on this point, neither do I encourage anyone to force for Christmas flowers, but I strongly advise all to reserve their best crowns and clumps until the turn of the year. The pure white graceful and sweetly fragrant sprays will be as much valued in February or March as they would be in December or January, while three times the quantity will be produced in spring to what is possible to secure at midwinter.

I do not write without experience. I have tried many times to have "fine Lilies of the Valley for Christmas," but regarding them as favourably as I could, they never merited being termed more than "miserable." It is not so, however, with our spring roots that are forced in the same structure, as these produce beautiful green foliage and a profusion of flowers. I suspect if you were chronicling all attempts to force Lily of the Valley in December five hundred failures and one success would be the average result. It is as an Easter flower rather than a Christmas one that Lily of the Valley should be grown. As a rule foreign crowns are better developed and matured than home-grown ones, and many of the former give profitable returns in February and March, while good home-grown roots will always force well by Easter.—M. M.

NOTES ON GRAPES.

THE exceptional season we have just passed through has left its mark upon many kinds of garden produce, especially upon both out and indoor fruits, which have in many cases been unusually late in coming to maturity, and in others deficient in either colour or flavour, and in some instances lacking both these essential qualities. Doubtless many useful lessons may be learned by noting the effect the dull wet summer of 1888 has produced upon different varieties

of Grapes. As far as my observations have gone when attending shows in various parts of the country a great want of colour has been noticeable in white Grapes, especially at some of the early shows. I naturally expected to find them rather green after so prolonged an absence of sunshine, but in this respect the samples exhibited were, as a rule, far worse than I anticipated. Towards the end of the summer a great improvement could be seen, but in no instance did we see Muscats possessing that beautiful bright tint which they should have assumed during more sunny seasons. Black Grapes have not, on the whole, been so well coloured as usual, although the falling off in that respect has not been so marked as in the case of white Grapes. Occasionally samples of splendid colour and finish have been met with, but these have been the exceptions rather than the rule. The old and general favourite, Black Hamburgh, seems to have been the most satisfactory in point of colour, of all really first-class black Grapes this season, which goes to confirm the opinion I have long held, that this variety colours quite as well in dull as in bright weather, and if the weather happen to be very bright at colouring time should always be slightly shaded, excepting those cases where the Vines are growing in old and comparatively dark houses.

Alnwick Seedling has fully maintained its reputation of colouring perfectly under all sorts of conditions. Either in a warm house or a cool one it seems to colour equally well, and whether the weather is bright or dull there is no perceptible difference in that respect. By far the best bunches I have seen of this showy Grape were growing in the large vinery under the charge of Mr. W. Taylor at Bath when I visited his now famous Vines in August last. The bunches were unusually large and shapely, the berries blue-black in colour, and carrying a dense bloom. Gros Maroc has also in many cases coloured well this season, but it is by no means so reliable in regard to colour as the last named variety. It is often seen in the hands of Grape growers of the front rank very deficient in that respect. This I think plainly shows that the art of colouring Grapes is by no means easily mastered ; each locality and the varying conditions of each season must guide our treatment. When once these facts are thoroughly understood I believe it is possible to colour many varieties of Grapes as certainly in one season as another, but not so with all.

I am firmly convinced that to have that noble yet capricious Grape, Madresfield Court, in a perfect condition we are to a great extent dependent on the state of the weather during the time the colouring process is going on. In very few instances during the past season have we seen this Grape in really good condition as regards colour, and at the September show held at the Crystal Palace, where we should expect to find it well finished if anywhere, the class provided for Madresfield Court was notoriously the worst in the show, although several of the exhibitors in that class have in previous years shown the same variety in exceptionally good condition. This to my mind clearly shows that either a certain amount of sunshine, or at least immunity from a series of wet days during the colouring period, is necessary to ensure good colour without cracking, or we have yet to learn how we can supply by artificial means the conditions under which these evidences of high culture can be ensured in unfavourable seasons. When the weather is dull without being wet the matter is simple enough. Maintain a steady heat in the hot-water pipes, and keep a little air on the top and bottom ventilators constantly ; but when a succession of wet days is experienced the case is quite different. During such weather a little air may be admitted at the top of the house with perfect safety, but the moment the bottom ventilators are opened the damp air finds its way into the house and cracking takes place in a few hours. Constant watchfulness on the part of those in charge soon discovers that cracking has begun. The bottom ventilators are at once closed, more heat is kept in the hot-water pipes, and cracking is arrested, and it is this want of bottom ventilation that has to answer for lack of colour in Madresfield Court this season ; at least such is my opinion. It is a matter of choosing between two evils—cracked berries on the one hand by giving bottom ventilation in damp weather, or lack of colour through not giving it. Those who are situated on high ground have a great advantage in colouring Grapes. Low-lying districts during August and September are frequently enveloped in cold fogs and mists at night (which are well known to be detrimental to the colour of Grapes) while the air on the rising ground around is perfectly clear and bracing. Large bunches of Gros Guillaume have not coloured quite so well as usual this season, excepting cases where the Vines were started very early. The pleasant sunshine which we have experienced during the past few weeks has, however, improved matters considerably.

Of all white Grapes Muscat of Alexandria has shown the effect of the season in the most marked degree. That beautiful bright amber tint which all strive to attain has been conspicuous by its absence among exhibits this season, although in a few instances during the September shows some of the examples staged of this fine Grape were of excellent colour for the season, notably those shown by Messrs. Taylor, Pratt, and Goldsmith at the Crystal Palace Show. Foster's Seedling and Buckland Sweetwater among white Grapes seem to have been the least affected by the absence of sunshine ; indeed those that won the premier position in the class for any other white at the above named show could scarcely have been improved in colour. Foster's Seedling as shown by Mr. J. Lloyd (who invariably colours this variety well) at Taunton, was very bright and clear, as also were some good bunches I saw at Gunnersbury Park. Golden Queen, when grown in an early house, has in some cases assumed a clear bright colour, but in later houses it has this season been disappointing, never getting beyond that "cloudy" appearance which generally characterises the variety when grown under the most favourable conditions, as it requires plenty of light from the time the berries set, and abundance of heat and air when ripening. Trebbiano where plenty of time has been given for ripening has improved in colour wonderfully during the last few weeks' sunshine, and is with us as well coloured as in ordinary seasons.—H. DUNKIN.

IN THE MIDLANDS.

DURING a recent run out of town I saw more of horticultural interest than I shall perhaps ever be able to record, but that is no new experience. More than once I have made a resolve to narrate all the episodes of a journey, but failed to complete the work. Too much was perhaps done at the beginning, and the end has not yet been reached. It may be well, therefore, to try a change of tactics, dwelling first on what was seen last, touching lightly on points of call and objects on the way, returning to these as opportunities may permit. It is no doubt a roundabout way to the midlands *via* Ipswish and the east coast, but as I wanted to see the tree that produced the twin Apples, round and Pear shaped, from the same stalk, a quick run was made to the busy Suffolk capital by a Great Eastern express that had no time to stop by the way. The tree was found in the back yard of a public house. It is a young tree, and had borne about thirty of the curious fruits as perfect in shape as Pears could be, yet Apples, which it produces in "proper" form also, the two kinds from the same truss of blossoms. There is no mistake about it, and, what is more, the tree had never been grafted, but was either a seedling or a sucker. Its origin, however, cannot be traced now, nor can an example of good culture in the production of Pears be dwelt on, and the way in which canker is conquered by their grower, Mr. R. Garrod, without either dressing the branches or touching or feeding the roots.

The next call was at Bury St. Edmunds, for Nowton, where Mr. Edward Luckhurst is managing an estate of 5000 acres, and making neglected and impoverished farms profitable, showing as fast as he brings the land into condition that farming will yet "pay." Then as a change there is something to admire in Mr. Porteous Oakes' pleasure grounds and unique Conifers. There is much of interest in the old ecclesiastical town of Bury, including its abbey gardens, and to horticulturists a famous townsman, Mr. Peter Grieve, the father, so to say, of the great race of golden tricolor Pelargoniums. Mr. Grieve lives retired a gentleman in the true sense, and widely respected. As may be imagined he begins to look ancient, but nothing in comparison with a pillar of the historical church of St. Edmunds, on which is affixed a marble tablet containing the names of the nobles who before the high altar took oath of the ratification of Magna Charta 670 years ago come the 20th of this month. I am tempted to dwell at Bury in such good company as the "raiser of Mrs. Pollock," but must rush on through the Fens to Peterborough, there changing train for Ketton for a call on Mr. H. Divers. So far as I know he has the finest Peach houses in the kingdom under his charge, and is certainly one of the best cultivators of the fruit. He gathered 6500 fruits, including Nectarines, during the season ; also managed to cut 9000 Maréchal Niel Roses out of one of the houses, grand blooms from vigorous plants grown on the rational system. Ketton, however, must be left, for Mr. Richard Gilbert had to be called on at Burghley and his vegetable novelties inspected, his Universal Savoy, which is as good as it is distinct, and the Victoria Brocco'i, which stirred a good clergyman into poetry, but I can only remember two lines of the verse :—

"As a cure for all ills, e'en superior to 'Cockle,' I
Strongly commend Richard Gilbert's White Broccoli."

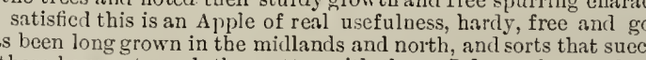
A rhyming feat worth mention ; perhaps I shall think of the rest of the lines some day. From Burghley the next call is at Pinchbeck, but as something has been heard of Mr. C. Parker's success in Gooseberry and Apple growing there, we will push on to Southwell, *via* Lincoln, to see an extraordinary combination of Apples and Osiers that will be more feebly referred to, and from thence to Nottingham to the end of the journey, Beeston and Chilwell. Much cannot be said about either during the Chrysanthemum month, still perhaps space can be found for a few lines.

CHILWELL.

A note has already appeared on the Chrysanthemums in, to employ the familiar appellation, "Pearson's Nurseries," and an illustrated advertisement last week gives an idea of the display. Imposing as is the view of the large show house there represented, it may, without

hesitation, be described as far short of the reality. A grand house is grandly filled with plants, as all will admit who see the sight before the flowers fade. They will also see other large structures filled with Chrysanthemums in various stages for the production of flowers in abundance from now until February, and perhaps later. They will see such banks of Maidenhair Fern in one of the long houses as cannot be seen elsewhere, as much money being, perhaps, realised by the sale of fronds as from the Grapes above them. "Plants cannot be grown under Vines" is a very old story, only true, however, in so far as the wrong kinds are attempted. Ferns are the right kind, and at Chilwell they are better than if there were no shade from the roof, while the Grapes are as good as if there were no plants in the house. But the structure is lofty, and with more diffused light than if it were low, and less damp also. Be that as it may, there is the combination, and it is most satisfactory. It will be seen that Orchids are growing well and increasing in numbers, not the costly varieties, but useful kinds that produce acceptable flowers freely. Quite a young forest of one of the finest of berried plants, Ardisia crenulata, will be admired. enough, one would think, to stock the country, and the clusters of fruits will remain fresh for a year. It is one of the best of room and corridor plants, and will keep healthy in a lower temperature than is popularly supposed. There is no cessation in the work of Pelargonium raising, for the sufficient reason that the new "sets" of each season pass off as readily as ever, and the house is always gay; perhaps the lofty back wall and facing almost due north enhances, by contrast, the effect of the colours, for it is clothed with the dark green elegant leafage of Asparagus plumosus nanus, which there luxuriates, showing that it neither wants sun nor a high temperature for thrifty growth. The worst, or the best, of it is they are always cutting the leaves as the demand is so great for them for associating with flowers, being found to last much longer than Fern in dry and heated rooms. Avenues of Maréchal Niel Roses in pots, also Vines, show how well their culture is understood and how great the demand for them must be.

Some of the finest houses in the trade, usefully occupied, are the characteristics of Chilwell, but it was not these alone, or mainly, I went to see. My chief object was to have a glance at the Improved, or as it is also known as the New Northern Greening Apple growing. Apples on plates in shows are all very well, but I have arrived at the conclusion that knowledge of the character of the trees is essential for determining the true merits of varieties. The best show fruits are not always the best to grow for profit. Some are both handsome and useful no doubt, but others are a good deal more tempting in appearance than they are serviceable and reliable. The Improved Northern Greening is not a "show" Apple, that is, the fruits are not of enormous size and glowing in colour, but they are of good saleable size, uniform, faultless in shape, and rank amongst the heaviest according to size of any, and are long keepers. A dish was certificated last month at Chiswick, and having seen the trees and noted their sturdy growth and free spurring character I am satisfied this is an Apple of real usefulness, hardy, free and good. It has been long grown in the midlands and north, and sorts that succeed well there have not much the matter with them. I do not know whether Messrs. Pearson grow more of this than any other, but it is evidently a favourite. They grow both trees and fruit, having orchards in bearing as well as nurseries for raising trees. I had only time to visit two of the latter, and one, the largest, a little surprised me, for it is fifteen acres in extent, and the late Mr. J. R. Pearson built a wall right round it. It is a single brick wall 4 or 5 feet high, stability being imparted by its form thus—



I did not inquire, but it was built possibly for keeping out rabbits as well as for the training of dwarf trees, and it certainly answers both purposes. Clean culture was manifest, and the routine work well done. And now I must leave Chilwell, calling at Beeston, and having a glance round the establishment of

MESSRS. FOSTER & PEARSON.

Though only twenty minutes could be spared for the glance, the time was sufficient for appreciating the extent and completeness of the manufactory, but not for noting the requisite details for a full descriptive account. Nothing of that kind will be attempted. Mr. Foster has retired from the business, and resides in a pleasant residence on the borders of the town. Long ranges of glass structures can be seen "over the wall," suggesting that the owner of them indulges in the pleasures of horticulture. Mr. Henry J. Pearson, who is well known for his business activity, quickly pointed out the main features of the works, setting into motion with the turn of a handle different machines for planing, chamfering, morticing, turning, boreing, &c., showing with what celerity and accuracy the work in wood and metal is completed.

Almost everything seems to be done by machinery, except painting and glazing, these operations being still, I think, done by hand. Some of the machinery is very ponderous, and one contrivance for making valves is said to be a combination of seven patents. The number of throttle valves made suggests their use in other than horticultural structures, and in other lands than our own. Everything connected with garden structures and their heating appears to be made on the premises, and the extent of the work is indicated by the provision made for its prosecution. The joiners' shop is 140 × 30 feet, and men and machinery all in action. The smiths' shop is upwards of 60 × 40 feet, full of boilers and men and noise. Next are two foundries, a good deal larger, in one moulds being shaped in sand for the reception of the molten metal from the cupola, for making fittings of various kinds useful and ornamental. Cutting out flower beds in lawns is rough work in comparison with the intricacy and accuracy of the receptacles cut in the sand from patterns, and out of which the articles come sharp and clear in outline. Then there is yet another huge building in which hot-water pipes are made, and every one tested at fifty times the pressure it is ever likely to endure.

Several other parts—offices, stores, fitting rooms—were passed through, including one in which large frames and roofs are put together before being sent away for erection. As may be expected, the timber stacks are enormous, and sheds for drying extensive, the supply being maintained several years in advance of requirements for ensuring high seasoning; indeed everything appears to be well done, and the establishment is well worth seeing by persons who are interested in the manufactories of horticulture.—A WANDERER.



HIGHLY PRICED CYPRIPEDIUMS.

THE best and scarcest of the hybrid Cypripediums still command large prices, and it is evident that, apart from the beauty of the plants, purchasers consider money so expended as safely invested. At a recent sale in Cheapside, Messrs. Protheroe & Morris had a plant of Cypripedium Marshallianum which was sold to a gentleman residing in America for 150 guineas. This Cypripedium is supposed to be a hybrid, but we do not think the parentage has been satisfactorily determined. On the same occasion a small plant of C. leucorrhodum was sold for forty guineas.

ORCHIDS IN NOVEMBER.

THERE is quite a wealth of Orchids available during the last three months in the year, among these being many very valuable and beautiful species and varieties. Unfavourable weather in the metropolitan area unfortunately materially shortens the duration of the bloom on thousands of plants, and in this respect the provincial growers have a decided advantage. Nowhere else is this more apparent than at Cheltenham, and all who pay a visit at this time of year to Mr. J. Cypher's nursery in the Queen's Road cannot fail to be impressed by the vigour, floriferousness, freshness, and general excellence of the Orchids there grown. To me it is a real treat, and which I never miss if it can well be avoided. The lovely white flowering and very sweetly scented Angræcum leonis is most attractive, and Angræcum sesquipedale will shortly be at its best, many strong spikes being formed. Aerides Lawrenciæ is represented by several grand plants with extra fine spikes, some with as many as thirty-four blooms on them. The original plant of this exceptionally fine variety when first imported fetched 235 guineas. It was bought by Sir J. Trevor Lawrence and named in compliment to Lady Lawrence. Mr. Cypher has good reasons for asserting they have some of the finest plants of this Aerides in the trade. Neither Angræcums nor Aerides succeed well in a strong heat and dry temperature, an intermediate temperature and an atmosphere that suits the majority of exotic Ferns best suiting them. The same remarks apply to the Vandas, of which Mr. Cypher has good plants of cærulea and insignis flowering freely.

The best of the Cattleyas now in flower are C. maxima and C. Bowringianum. The latter may be described as a winter flowering C. Skinneri, and both are always serviceable at this time of year. Cypripediums are largely grown by Mr. Cypher, and there are always some good species and varieties in flower. At the present time the most attractive are C. insigne, C. insigne Maulei, C. insigne punctatum violaceum, the last named being very fine; C. Spicerianum very strong and the forms good; C. Harrisonianum, C. Roezli, one of the freest to flower; C. Haynaldianum, and a fine form of C. Sedeni. In the same house there are several well flowered pans of Cœlogyne ocellata, and C. cristata in variety promises to be as fine as usual, many of the specimens being extra large.

Dendrobiums will soon make quite an imposing display. D. Jamesianum is very showy and D. formosum giganteum still more so. There are numerous strong plants of the latter in 4-inch pans, each carrying on an average nine fine flowers. These and D. bigibbum, of which there is quite a large stock of extra strong and very floriferous plants in small pans, are grown suspended near the glass in strong heat, this treatment suiting them admirably. The lovely hybrid D. rhodostoma, raised by Mr. Seden, and obtained by crossing D. Huttoni with D. sanguinolentum, appears to be perpetual blooming, and is a grand acquisition. Lælia Perrini superba is very

beautiful ; it is bearing three large blooms on a spike, the labellum being well formed and of a brilliant crimson colour. The ordinary species is also very showy, and good for late autumn flowering. Odontoglossums are very numerous and the majority extra strong. A considerable number will soon be ready for the show house, among these being O. Roezli and Roezli alba ; O. grande, of which there are several splendid varieties ; O. Rossi, just coming into bloom, and the lovely O. aspersum. This is said to be a natural hybrid between O. maculatum and Rossi, and Mr. Cypher's has one extra good spike showing.

Oncidiums are largely grown for autumn and winter flowering. The most noteworthy among these is the lovely O. Jonesianum, of which there are many grand plants in bloom, the strongest spikes bearing as many as twelve good blooms. O. Forbesi, also a fine variety, has one fine spike with fourteen blooms. O. varicosum or Rogersi is most free flowering, and there will soon be a grand show of this showy species. O. crispum and O. tigrinum are likewise worthy of mention, and I cannot close these brief notes without reference to the well flowered pans of the charming Indian Crocuses, Pleiones birmanica and lagenarica.

NARROW VINE BORDERS.

Those making new Vine borders I recommend to use good yellow turf fresh cut from an old pasture. Do not chop it up as is generally recommended, but cut it in pieces of about 8 inches square. After the width and depth of the border has been decided, which I think should be 14 or 16 feet wide and 2 or 2½ feet deep, certainly not more, give about 6 inches of good drainage, which should consist of broken brick, flower pots, or clinkers from the boiler fires. If the bottom and sides can be concreted and cemented so much the better, as this will prevent the roots penetrating into soil which might not be suitable for the production of fine Grapes, and which is in some cases the cause of shanking. Having prepared the border for the soil, cover the drainage with turfs, grass side down, and put a good sprinkling of old lime rubbish and crushed bones or Thomson's Vine manure over this. Then proceed to place on this another layer of turfs, cut into pieces about 8 inches square (if in the case of lifting old Vines all across the border). But where young Vines are to be planted, I recommend only 3 feet width to be made the first year, the rest of the border to be made up in 3 feet widths every year till completed. As before stated, in renewing old Vine borders it is necessary to make them the full width at first. After having the first layer of 8 inch square turfs laid, put another good sprinkling of old lime rubbish and crushed bones, and proceed in this way until the border is within 4 or 6 inches of being completed, then well spread out the roots of the Vines, and cover with chopped turf, lime rubbish and crushed bones, Thomson's manure, or both.

In wet cold districts I recommend that the border be all inside. In fact I have not much faith in outside borders anywhere. The width I have stated is ample to grow any Vines in, and Vines planted in borders made up in this manner will last in good bearing condition for fourteen years or more, provided they are properly managed and not over-cropped.—G. Hilton.

As stated by "Spectator" and "W. S.," Vine borders, as a rule, are too large. It is very well where the natural soil and drainage are good to let the Vines have an unlimited root run, as then they pick up food as they travel. Many of the large old Vines owe their success and vigour to this cause, and probably if the borders had been restricted they would not succeed so well. I am a firm believer in small, well drained, and sound borders, as then you can "feed" up and know that the roots receive the benefit of whatever is applied in the form of liquid feeding or rich top-dressing. We have four restricted borders, and the Vines are doing well. Madresfield Court does capitally in a restricted border, bunches and berries of fine colour, and not one cracked berry. We treated the Vines in this house, when the Grapes commenced colouring, the same as I recommended for Lady Downe's to prevent sealding. I feel convinced it is the atmospheric conditions which cause this Grape to crack. A firm border is also necessary for the successful growth of the Vine, but the state of firmness must depend upon the class of soil you have to deal with. With some soils, even if one half is pounded brick and mortar rubbish, if trodden on it will run together like concrete. For instance, the soil we have to deal with is a very stiff limestone clay. When wet it will stick like birdlime, and if trodden on whilst wet the impression caused by the foot will hold water like a cup.

In that excellent little treatise, "Vines at Longleat," Mr. Taylor states that the more trampling the border has the better, if not trodden on immediately after watering or until the surface is dry ; and in the graphic description of the gardens at Cardiff Castle twelve months since by "A Tourist" we read of two 16 stoners trying to make an impression on the borders there and failed, and at the same time praising the wonderful crop of Grapes. When one of the two was here a short time afterwards and was admiring the state of the Vines generally in a large Hamburgh house he said "there is nothing like a firm border." I thought we will have a firm border if it will lead to further improvement. When top-dressing time arrived so much loam, burnt refuse, and pounded lime rubbish was put on and well firmed down with the back of a fork and excepting after watering we did not trouble about treading on the border in the least, and at the same time was congratulating ourselves on having a firm border. In the autumn we had lifted the roots in the outside border, and for a time everything looked promising, but when colouring time arrived the Grapes did not seem to improve as they ought considering the firm border and the quantity of healthy roots below the top-dressing when it was applied ; so I anxiously looked for the roots working into the top-dressing, and looked in vain, for they were quite dormant. We had practically "sealed up the roots from the air." After seeing how matters stood it did not take long to decide what to do. Off came the "top-dressing," and a lighter dressing was given in its place, with a mulching of littery manure. The roots soon commenced to work upwards and the Grapes and Vines improved rapidly. A little warning may be of use, for after reading the remarks of "W. P." some might be trying their hand at the ice mallets irrespective of the soil they have to deal with. It is one of those fallacies of the culture as expounded by Mr. Goodacre—"What will succeed in one place will not in another."—A. Young.

JASMINUM HIRSUTUM.

Jasmines are all favourites with plant-growers, as the majority of the species are not only extremely ornamental as climbers, either in



Fig. 48.—Jasminum hirsutum.

warm or cool houses and in the outdoor garden, but they also yield such an abundant supply of fragrant flowers that their utility is unquestionable in most establishments. The one of which a spray is represented in the woodcut (fig. 48) is chiefly remarkable for its dwarf shrubby habit, which admirably suits it for culture in pots in a stove or intermediate house, where with moderate careful attention to the culture it will produce its flowers as freely as could be desired. In Bengal, where the plant abounds, Dr. Roxburgh has stated that the heads sometimes contain thirty flowers each, but in this country they do not attain more than a third of that size, usually bearing from six to ten flowers in each cluster. Even, however, in this condition they are very attractive, as not only do the shoots produce flowers at their extremities but also from the side shoots, so that the growths are often clothed with flowers for a foot or more from the apex. The leaves are elliptical, dark green, and with the petioles and stems are thickly studded with hairs, whence the specific named is derived ; and the flowers are large, pure white, and fragrant, on stout peduncles, and thickly clustered.

It is considered that the first plants were sent from the East Indies to Lady Amelia Hume by Roxburgh early in the present century, though at one time it was thought to have been grown by Miller in the middle of the eighteenth century, as he mentions Linnæus's Nyctanthes hirsuta. But this has been proved to have been founded upon a specimen of Nyctanthes arbor-tristis.

J. hirsutum is easily grown, and it only requires a compost of light

turfy loam, sand, and leaf soil, the temperature of a stove, and liberal supplies of water during the summer.

FRUIT TREES ON NORTH WALLS.

THE profitable cropping of north walls is a subject which interests many readers. Every square yard of them may be made profitable, and they will produce crops that will succeed others grown in more favourable positions. Our favourite trees for planting on north walls are Morello Cherries, Red and White Currants, with Gooseberries. We have tried Apples and Plums on them, but could never make them profitable. They bear sometimes, but do not always ripen, whereas the Cherries, Currants, and Gooseberries never fail. From trees in a sunny position we gathered Morello Cherries during the first week in August last, and from trees on a north wall we gathered the Cherries on October 5th. Our Cherry season, therefore, extended over nine weeks, but it would have fallen far short of this had it not been for the north wall trees. Gooseberries remain good on a north wall from three to four weeks after those in the open, and Currants longer still; the fruit in both cases is always plentifu and good.

Before, however, beginning fruit culture on north walls it should be seen that the soil is in proper order, and the soil in this position is not always suitable. It often happens that those who have to deal originally with north walls consider that they will never be of any value, and their neighbourhood is used as a receptacle for all kinds of bad soil and refuse. To plant in this would be to court failure, but if all unsuitable soil is removed, drainage introduced where necessary, and as much attention given to the soil for trees on a north wall as is generally devoted to south borders, success will be permanent. Without this care it would be better to leave north walls alone, as it will only be throwing away plants and what little labour is given to them to attempt their culture under such conditions. From November to March is the season when north walls may be planted, and only healthy young trees or bushes should be introduced.—A KITCHEN GARDENER.



THE ROSE SEASON OF 1888.

FOR many years I have been enabled to chronicle in the pages of the Journal my impressions of the Rose season. Year after year for some years now we have been looking for that which ever seems to elude our grasp—a good Rose season. Our hopes run high, our expectations are great, and then when we are looking at last for the fulfilment of our hopes the unexpected happens, and disappointment comes. Never has this been more thoroughly the case than with the past season. Conditions seemed to be promising, we had had a splendid summer in 1887, everywhere people spoke of well-ripened wood, so that even if severe frost came the plants would be able to resist it. Now it is very difficult to write about weather, for it varies so much in different parts of our islands that what I might write about Kent would not in the least apply to Surrey, although a contiguous county. We had no intense cold here, but we had two heavy falls of snow, which lay upon the ground for weeks, and kept the plants warm and comfortable. When pruning took place, which was very late, there was hardly any wood to be cut away on account of its being frost-bitten. We had no late frost, and the young shoots started away without let or hindrance, the bloom buds were formed, and then set in that long period of drought, and low temperature occurred, which ruined our hay crop and did so much harm in our gardens. We had snow as late as the 9th of April; during May and June hardly any rain until the end of the month; and throughout July, as many organisers of Rose shows know to their cost, heavy drenching rains and thunderstorms, which were, as is their wont, most erratic in the way they dispensed their favours. This was specially the case with the provincial show of the National Rose Society at Darlington, where a thunderstorm broke over the town just as the show was opened, and neither before nor after was there any more rain that day. The consequence of all this was that it was the most aggravatingly disappointing season that I ever recollect. And this did not end with the exhibition season, for I have rarely known a worse autumnal season. We had on October 3rd all over the country a frost which varied in its intensity in different places, but everywhere was quite sufficient to cripple the autumnal bloom. It was succeeded by a time of thick fogs and heavy mists, so that Roses got glued together; and although light and pleasant weather succeeded and St. Luke's little summer came in due course, yet the mischief had been done, and even the ever-faithful Teas succumbed to it. The Rose which has shone out conspicuously amidst the wreck has been Marie Van Houtte, with its fine foliage and sweet flowers; I allude of course to the open. From the walls I have been enabled to gather some good blooms, but even these are not so many as in other years.

I have had as in other years a good opportunity of seeing the flowers which have been put up for exhibition, have attended many of the principal shows and seen many private gardens, and the verdict which I have to pronounce on the season is that it was a very mediocre one. There was an absence of really grand blooms, no Roses that cling to one's memory as superexcellent, no boxes of which one could say That is one of the best boxes I ever saw exhibited, nor was there any Rose which seemed to be good everywhere as in some seasons. And if it was bad for all Roses it was especially so for Teas and the lighter coloured Hybrid Perpetuals. Many Teas were exhibited with all their outer petals skinned off, and most light Roses of any fulness were absent from the stands. Thus of Her Majesty, out of thirteen entries at the National only one was staged, while one hardly saw any of the Victor Verdier race. Roses with fewer petals, such as Baronne de Rothschild, Mabel Morrison, and Merveille de Lyon (which seems after all to be only a sport of the Baroness) did not suffer so much; shading was in many cases of little use. So heavy were the storms that even where the beds were mulched I have known the blooms to be spoiled 2 feet up by the splashing of the rain.

All this was very disheartening to exhibitors, and then when, as was too often the case, the show day was wet and boisterous their troubles were increased. I have before my mind the case of an unfortunate exhibitor who, anxious to be in time, had come early to the show ground. His boxes were placed under a tree where he was told the tent was to be erected. After sitting there under an umbrella, the picture of patience on a monument, he was told that there would be no tent erected there after all, the Roses must go into one already erected, as the entries were so few. And so again, when we were expecting a good fight at Darlington, one exhibitor from whom we expected great things, had to telegraph that a thunderstorm, which had not extended a quarter of a mile on either side of him, had broken over his rosery and completely put him *hors de combat*. These same causes prevented the new candidates for favour from being seen to much advantage. We had hoped for much, not from foreign raisers, for I think we have long ceased to place our hopes upon their fair promises and high-sounding phrases, but there were many of home production that we were anxious to see more of—Earl of Dufferin, Sir Rowland Hill, Miss Ethel Brownlow, Her Majesty, Grand Mogul, Princess Beatrice, Mrs. John Laing, &c.; but we have been disappointed. Comparatively few of them have been shown, but as far as they have we may, I think, say that Earl of Dufferin is a very distinct and fine flower, brilliant in colour, and likely to prove a most useful exhibition Rose. Sir Rowland Hill is a very distinct Rose of an unusual shade of colour, and is, I think, sure to be a favourite. Miss Ethel Brownlow is a very sweet coloured Tea, not quite like any other flower that I know. Her Majesty still holds a very doubtful position both as to her beauty and her constitution, some maintaining that it is a vigorous and others a bad grower; but as I once heard of a gentleman saying to a fellow passenger that so and so was very much misunderstood, but that's just what a person in his position ought not to be, so I say of a Rose nowadays, that it ought to have a constitution about which there is no doubt. Grand Mogul it is impossible to distinguish in flower and habit from Jean Soupert, while it is equally with that variety subject to mildew. Princess Beatrice is a very lovely Tea, and Mrs. John Laing is without doubt a fine Rose, perhaps the best the raiser has sent out.

So far with regard to the Roses, and now with regard to the exhibitors. It must have been a great pleasure to all Rose growers (except perhaps to those who felt the power of his arm) to see Mr. R. N. G. Baker of Exeter, the champion of former days, once more exhibiting and resumed his place as the premier amateur grower. Again after the lapse of some years he has carried off the trophy, and has shown that, notwithstanding all the disparaging things said of it, the Manetti will, in some places at any rate, lead those who trust in it to victory. Other exhibitors are coming on, others taking higher positions, and, while some are retiring from the field, we are glad to think that there are others to take their place.

Although the season has been unfavourable for Teas, yet there is a manifest increase in their popularity, and on all sides I hear of beds of Hybrid Perpetuals being done away with and Teas planted in their place, while I have again to notice the increased favour with which the seedling Briar and Briar cutting are held; but we may perhaps run into error in imagining that the Manetti will never in any place find favour.

There is also, I think, evident an increasing desire to cultivate the species of Roses, and it is one that ought to be encouraged. There are many beautiful things amongst them; and now, as I am writing, the beautiful hips of Rosa rugosa and the brilliant foliage of the little Scotch Rose tell us that they are deserving of consideration for other reasons than the flowers, while some additions to the charming dwarf Polyantha Roses in Little Dot and others; but, on the whole, the season has been as disappointing with regard to new Roses as it has in the older kinds.

There has, however, been no such record amongst exhibitors as in past seasons. No one has presented such a record as Messrs. Harkness did last year, or Mr. Pemberton the year before. No one has been able to carry on the fight from beginning to end and to come out victorious in the encounter, through no fault of theirs, but through the extraordinary character of the season through which we have passed.

The position of Rose societies is, like everything else, liable to change.

Some come and some go. The National's change to the Crystal Palace has been much appreciated, and the long spell of dreariness connected with South Kensington is happily at an end. A vigorous and successful effort was made to establish a Rose show at Gloucester, which it is hoped will be permanent. I have heard a great deal, although I did not see it, of the remarkable show at Tibshelf, a colliery village near Derby, where amongst other classes sixteen stands of 48's were shown. There are some societies which seem to be in a very uncertain position, while others are acquiring fresh vigour.

I have generally concluded my retrospect with some personal allusion, and hope I may be pardoned for doing the same now. I have not gone so far afield as last year, and I fear unless the National cross the border again my Scotch journeys are a thing of the past, and despite the unfavourable weather, my journeyings have afforded me much real pleasure. I have already stated how at Gloucester I renewed an acquaintance after a lapse of nearly fifty years, and in truth it is pleasant to meet again those with whom we have enjoyed pleasant meetings before, and to make fresh acquaintances. Again have I to express my sincere thanks to all those officers of different societies with whom I have been brought into contact for the unfailing courtesy and kindness with which I have been met, and again I have to say that I have been enabled to keep all the engagements I had made, and this when as every year means two to any who have passed the allotted time, I have indeed much to be thankful for. I feel it cannot last for long, but while it does it adds not a little to the pleasure of one's life to meet on such pleasant occasions so many kind and valued friends.—D., *Deal.*

A CORRECTION.

I SHOULD like to make a correction in my last letter. On page 401, thirteenth line from the bottom, for "perish" read "push," and for "ripened" read "repressed." Five lines higher up for "over-weak" read "own weak." I did not think I had sufficient genius to write badly, but am now beginning to have hopes.—W. R. RAILLEM.

IMPRESSIONS OF LONGLEAT.

A LONG-FELT wish to visit these far-famed gardens was recently gratified, when I had the pleasure of seeing the noble vineries and giant Vines from which the splendid Grapes had been cut that justly deserved the high honours and unstinted praise that have been bestowed upon them from time to time when placed upon the exhibition boards. Both Vines and Grapes have so frequently been fully described in the Journal that it would be superfluous for me to dwell upon them; but as there are other features at Longleat worthy of more than a passing notice, I am jotting down a few mental notes that are still fresh in my memory. The flower garden is a very fine one in every respect, and seems materially to enhance the beauty of the magnificent edifice around which it is situated. The features of the garden in question are not confined to one style of flower gardening in particular, as both ancient and modern ideas of the art are thoroughly well carried out. In a somewhat secluded enclosure adjoining the main portion of the flower gardens some relics of the ancient idea of the art are still retained in form of beds of fantastic shape outlined with broad lines of Box and Yew, which must require a great amount of both skill and patience to keep clipped into their precise and formal outline. In striking contrast to these beds is a well arranged herbaceous border, where Dahlias, both Show, Fancy, and Cactus, have flowered in rich profusion. Achillea ptarmica fl.-pl., Gladiolus, Asters, Delphiniums, and herbaceous Phloxes were looking bright and effective, and supplying plenty of flowers for cutting. Some small beds of Tuberous Begonias next attracted attention, many of the flowers being of enormous size and of fine rounded outline. A few carpet beds are well designed, and planted with the usual assortment of Alternantheras, Sedums, &c., looked fairly well; but the past season has been sadly against this kind of bedding, absence of sunshine having prevented their assuming that brilliancy of colour which is essential to make them effective. In other beds large masses of Henry Jacoby, Indian Yellow, Bijou, and Vesuvius Pelargoniums, Verbenas of various colours, edged with variegated-leaved Geraniums, were extremely imposing, while some oblong beds arranged with several varieties of bronze and tricolor Pelargoniums in zigzag fashion were very striking, the flower garden throughout presenting that neat trim appearance without which the beauty of the finest beds and borders would be greatly marred. Near the glass structures I noticed a fine bed of Carnations of a very pleasing pink colour, a variety much grown in the locality, but as yet does not seem to have been honoured with a name, which, however, I hope it will speedily receive, and be widely circulated.

Some fine Poinsettias were growing in a three-quarter span-roofed house, where they had been throughout the summer. The plants, which had made strong sturdy growth, were the picture of health, and cannot fail to make a grand display when their brilliant scarlet bracts are fully expanded. Another large house was principally occupied by Crotons and Dracænas, varying in height from a few inches to 4 or 5 feet, so as to supply plants of all sizes for decorative purposes, for which they are in great demand at Longleat. Many of the best varieties in cultivation are grown, and among others I noticed well-coloured examples of Crotons Disraeli, Evansianus, Hawkeri, Johannis, Morti, Queen Victoria, angustifolius and variegatus. In the Melon houses were some fine fruits of Longleat Perfection and Hybrid Cashmere.

Mushrooms are also very successfully grown, a long shed having been converted into a most useful Mushroom house. At the time of my visit a plentiful supply of "buttons" were pushing through the soil. Other beds had just been spawned, while another was being constructed. Mr. Pratt surfaces the beds with good loam without any other addition, and finds it answers the purpose admirably. Standing on a bed of coal ashes in the open air was a healthy and vigorous collection of Chrysanthemums grown as bush plants for supplying plenty of flowers for cutting during the dull November months. These jottings have already grown beyond their intended length, but before concluding, I must mention that the kitchen garden was well stocked with abundance of such vegetables as are required to keep up a constant supply for a large establishment.

Everything at Longleat is carried out on a large scale. A gigantic park, a noble mansion, an imposing flower garden, big vineries and splendid Grapes, were some of the impressions made upon my mind during a somewhat hasty visit. Such gardens require a skilful and energetic chief to control and direct the forces at his command. This, the gardens at Longleat undoubtedly possess in the person of Mr. W. Pratt, who so ably presides over them.—H. DUNKIN.

Notes & Gleanings

EVENTS OF THE WEEK.—The Chrysanthemum Shows for the present week are very numerous, the following being the chief:—November 8th, Walton, Teddington, and Dawlish; November 9th, Crystal Palace, Leicester, and Hitchin; November 12th, St. Neots; November 13th, Moulsey, Southend, Devizes, Putney, Brighton, Northampton, Twickenham, Winchester, Watford, Cardiff, Aseot, Barton-on-Humber, Maidstone, Twyford; November 14th, Bournemouth, Chelmsford, Southgate, Ealing, Kent County, Hampstead, Faversham, Highgate, Dartford, Yorkland Bedford, most of these being two-day shows. On Tuesday, November 13th, the Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster.

—— A SPECIAL general meeting of the ROYAL HORTICULTURAL SOCIETY will be held in the Council Room, 111, Victoria Street, S.W., at 2 P.M., on Tuesday, November 13th, to take into further consideration the new code of bye-laws, and to adopt the same.

—— LEDBURY FRUIT SHOW.—The following addendum to the report of the above Show arrived too late for insertion last week:—"The special prize of £1, given by Mr. Piper, was won by Warner's King, as the largest Apple in the Exhibition. Messrs. G. Paul & Son, Cheshunt, J. Veitch & Sons, Fulham, exhibited fifty and sixty varieties of Apples and Pears, not for competition."

—— JUST as we are going to press we hear that the PORTSMOUTH CHRYSANTHEMUM SHOW is a great and good one. The 25-guinea cup is won by Messrs. W. & G. Drover, Messrs. Flight, Penfold, and Inglefield following. Mr. Molyneux is first for twenty-four cut blooms, Messrs. Trinder, Flight, and Penfold securing the remaining prizes. The £10 Jubilee prize for eight specimen plants is won by Mr. W. Joy.

—— CATERHAM GARDENERS' SOCIETY, SURREY.—At the following ordinary meetings for mutual improvement papers will be read on the subjects named. November 16th, "Claims and Requirements of the Kitchen Garden," by Mr. R. Catt; November 30th, "Odontoglossums," by Mr. Lemaire; December 7th, "Bouvardia," by Mr. Kimpton; December 21st, "Gesnerias," by Mr. Pearman. 1889.—January 11th, "Eucharis," by Mr. Hieks; January 25th, "Fern Spore," by Mr. G. H. Rose; February 8th, "The Benefits of a Cottage Garden," by Mr. F. A. White; February 22nd, "Melons," by Mr. Wood; March 8th, "Libonia floribunda," by Mr. Wyatt; March 22nd, "Cucumbers," by Mr. Papworth; April 12th, "Tuberous Begonias," by Mr. Brand; May 10th, "Mushrooms in Frames," by Mr. D. Jones. Meetings will be held at the Workman's Club at 8. P.M. each evening. Members' subscriptions are 6d. per quarter (payable in advance) in October, January, April, and July. New members may be admitted at any ordinary or Committee meeting upon payment of an entrance fee of 6d. The lending library consists of five standard works on horticultural subjects. These are lent to such of the members as apply for them, according to priority of application. Mr. R. Catt is the Assistant Secretary.

—— HORTICULTURAL CLUB.—We are requested to publish the following, and readily comply:—"The Club has now been in existence for twelve years, and has played no unimportant part in keeping alive

the interests of horticulture, both by gathering together in social intercourse those who are interested in the pursuit, but also in the dissemination of knowledge by the papers which have been read at the meetings, and afterwards published in the gardening papers. The Committee have recently come to arrangements with the "Hotel Windsor" Company, Victoria Street, Westminster, and the Club has entered upon the occupancy of its new quarters there. The situation is central, close to the offices of the Royal Horticultural Society, and within three minutes' walk of the St. James' Park Station of the District Railway, and omnibuses to all parts pass the door every two or three minutes. The hotel is well known as one of the best in London, has excellent smoking and billiard rooms, swimming bath, &c., and special arrangements have been made with the proprietors for the accommodation of members at a reduced rate. The Committee think, therefore, that a better support ought to be given to the Club, and would urge upon its members the necessity of enlisting new candidates for membership. Subscription, two guineas per annum, no entrance fee. Any inquiries addressed to the Secretary as above will be immediately attended to."

—— Cabbages.—At one time Ellam's Early was my favourite spring Cabbage, but it had to give way to Mein's No. 1, which for spring and summer use is the only Cabbage I now grow. It hearts early and grows to a great size, and therefore remains for a long time in fit condition for use. In 1886 I sowed the seed on the 5th July, in 1887 on the 3rd, and this year on the 5th of the same month. It showed no tendency to bolt, and, were it necessary, I would sow earlier. Were I to grow only one variety it would be Mein's No. 1, and I could cut it every day all the year round. For spring I plant 1 foot apart, pull for use every alternate plant, and then every other row. I think it would be the Cabbage for the grower for market.—J. B. H.

—— Mr. Thos. Smith, Henbury Hill, Bristol, writes:—"My experience of Beauty of Hebron and Reading Russet Potatoes during the past season agrees with that of Mr. J. Palmer, and I do not intend to grow either of them again. Of about a dozen sorts grown, Satisfaction and Best of All were all that could be desired for quantity, comparative freedom from disease, and excellence of quality when cooked. Sutton's Prizetaker, though rather badly diseased, gave such a heavy crop of tubers of first quality that it was far from being unprofitable."

—— A correspondent sends the following paragraph on Ophiopogons:—"It is to be feared these are not so much known by cultivators as they should be, seeing how useful they are for decorative purposes. Recently, when looking over a large garden at Bagshot, my attention was drawn to a large plant of the Golden variegated Ophiopogon, growing in a 10-inch pot. It had from forty to fifty spikes of blue flowers. When seen in this state, the spikes rising above the long grass-like golden leaves, render it a most beautiful object. This plant was from 2 to 3 feet across, and the foliage covered the pot, adapting the plant for vases. I was informed that it had stood in the cold house when the frost was severe enough to freeze the pot to the ground. This proves the plant to be very hardy. The Ophiopogons are strong rooting plants, needing good holding soil and an open situation to secure bright, clean foliage."

—— Lilium auratum Degenerating.—Five or six years ago we bought 100 bulbs of this Lilium. Some were potted and grown for conservatory decoration, others were planted out in the bed of a greenhouse while others were planted in various parts in the open ground, and in almost every instance the bulbs have degenerated. I fear that their disposition to degenerate is very general. I have it on good authority that the sale of this Lily exceeds all others. They are bought largely as imported, and many more are purchased when seen in bloom in nurseries, so that of all Lilies this should be the most common and the best, but it is neither; and although I would not advocate its limited purchase or culture, yet no one need buy it under the impression that good bulbs will become better in their hands, or that once bought a grand annual display will be the result.—M. M.

—— In the report of the Superintendent of the Adelaide Botanic Garden for the past year it is stated that the Insect-powder Plant (Pyrethrum cinerariæfolium, *Trévir.*), roseum, and carneum, *Bibrst.*), and the Cheesemaker (Withania coagulans, *Dun.*), which were introduced into the Garden a few years ago, have found a congenial climate there, and have prospered wherever they were planted in the colony. Eland's Boontges (Elephantorrhiza Burchelli, *Benth.*), which has also been recently introduced, does fairly well. In winter nothing remains of this plant but the roots, which contain tannic acid. A number of cuttings from the Daira Grape, a valuable species which comes from Almeria, have thriven wonderfully in the garden. There are now in the Palm house 180 species and varieties of Palms. The Museum of Economic Botany attached to the Garden has been enriched during the past year by 1795 articles, amongst the most remarkable of which was a collection sent by the Sultan of Jahore, one of the specimens being a sample of sugar prepared from the Cocoa-nut.

—— Mr. Mallender sends the following Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for October.—Mean temperature of month, 45·3°. Maximum on the 26th, 65·2°; minimum on the 33rd, 24·2°. Maximum in the sun on the 7th, 106·2°; minimum on grass on the 6th, 18·2°. Mean temperature of air at 9 A.M., 45·4°. Mean temperature of soil, 1 foot deep, 46·9°. Number of nights below 32°, in shade ten, on grass twenty-one. Total duration of sunshine in month 99 hours, or 31 per cent. of possible duration. We had eight sunless days. Total rainfall, 0·64 inch; maximum fall in twenty-four hours on the 1st, 0·25 inch. Rain fell on ten days. Average velocity of wind, 7·6 miles per hour. Velocity exceeded 400 miles on three days, and fell short of 100 miles on thirteen days. A fine dry month, with very cold nights. The rainfall and mean minimum are both lower than any of the last twelve years. The last few days were very warm, and on the 28th the minimum was only 60°.

—— The Wakefield Paxton Society.—At the last meeting of this Society, held in their rooms, Mr. W. Hudson of Sandal read a very interesting paper on "Fungi and Fairy Rings." In the course of his remarks Mr. Hudson pointed out how restricted and unsafe were the popular conceptions in regard to the nature and qualities of the members of this lowly but ubiquitious section of the vegetable kingdom. Outside of the economical aspect of the subject they presented to the student a multitudinous array of forms and habits which could not but prove attractive to the inquiring mind. In the case of the aggregation of fungi, familiarly known as fairy rings, they had, up to very recent times, been surrounded with a halo of superstition, legend, and poetry. Mr. Hudson, however, traced out its life history in a manner which proved that in this, as in all cases where poetical and supernatural attributes were investigated, it had had to yield to the modern spirit of inquiry. There was a short discussion, and in conclusion a hearty vote of thanks was accorded to the essayist on the motion of Messrs. Bott, Bennett, and Garnett, who referred in eulogistic terms to Mr. Hudson's treatment of the subject. There was a good attendance of the members, over whom the President (Councillor Milnes) presided.

—— In a recent issue of *Nature* an interesting account of the Flora of the Kermadec Islands is given, derived from the investigation of Mr. T. F. Cheeseman, Auckland, New Zealand:—"There are four islands lying at great distances apart, between 29° 10′ and 31° 30′ S. lat., and stretching in a south-west and a north-east direction, like New Zealand itself, the nearest point of which is between 500 and 600 miles distant. Raoul or Sunday Island is the largest and the farthest from New Zealand, being twenty miles in circumference, and about 640 miles from Auckland, and a little less than that distance from Tonga. Macaulay, the next in size, is sixty-eight miles to the south-west of Sunday Island; and Curtis and L'Esperance, still farther to the south-west, are little more than rocks. The expedition failed to land on the last-named island, and the visit to Curtis Island was of very brief duration, hence the botany relates almost exclusively to Sunday and Macaulay Islands. The group is of volcanic origin, and the greatest elevation in Sunday Island is 1720 feet, while Macaulay nowhere reaches quite half that height. Altogether Mr. Cheeseman collected 115 indigenous vascular plants, eighty-four being phanerogams and thirty-one cryptogams, and only five of them were regarded as endemic. In addition to the foregoing, twenty-six species of naturalised plants, chiefly European weeds, were observed or collected. Of the 115 indigenous species, no fewer than eighty-five are also found in New Zealand, though only fourteen of these are absolutely confined to the two localities. Forty-four species are found in Norfolk Island, forty of which also occur in New Zealand, and only two are apparently confined to Norfolk Island and the Kermadecs. Forty species extend to Lord Howe's Island, but thirty-four of these are also in New Zealand, and none of the peculiar plants of Lord Howe's Island reach the Kermadecs. Seventy-six of the species are common to Australia, sixty-three of them being also in New Zealand, and none of them otherwise peculiar to Australia. Lastly, forty-seven are found in Polynesia, and thirty-one of these also occur in New Zealand."

—— Assam and its Tea Gardens.—The report of the administration of Assam for the past year illustrates the theory of the survival of the fittest. While the amount of land under Tea cultivation is increasing, the number of gardens is decreasing, owing to amalgamation and other influences. The average size of the Assam gardens is increasing year by year, showing combination among owners or more capital, and the small cultivators are disappearing. There were 883 gardens in 1886 and 873 in 1887, although new gardens were opened during the latter year. Even more was done in previous years to amalgamate gardens with a view to economy and convenience of working. The total area under Tea cultivation in 1887 was 950,171 acres, an increase of 16,037 acres over 1886. In 1882 the area of the gardens was 783,362 acres. These figures represent the areas held by the Tea planters, and either not yet worked at all or in one or other of the various stages between jungle and productive Tea garden. The area under mature plants last year was 177,900 acres, and under immature 33,179. The area under mature plants increases steadily in Assam ; in 1882 it was 156,707 acres, 1885 159,876. The total Tea production of the province for 1887 is given at 68,451,180 lbs., an increase of 6,731,502 lbs., or 10·91 per cent. over 1886, and more than double the production of 1885. According to the figures of the Indian Tea Association, Assam produced 74·89 per cent. of the whole crop of Indian Tea in 1887. The yield per acre for the whole province was 385 lbs. for the year, as compared with 363 lbs. in 1886. The tendency of the cost of production is to decrease with the improved communications and methods of cultivation and manufacture. More is obtained from the soil at less cost ; it is handled more cheaply and effectually, and reaches the consumer by more economical communications. The price is now lower than it ever was before, yet the planters are doing fairly well as regards profits. The explanation is that the Tea can now be turned out for less than was possible a few years ago. The use of machinery of an improved character is now largely extended, while freight and cost of transport are much less. The coolies are growing older and more skilled in their work, and can do more and far better than they could when raw hands. The Indian Tea Association estimates that Assam will produce 70,975,884 lbs. this year out of a total Indian crop of 95,829,312 lbs.—(*Tropical Agriculturist*).

WINTERING TUBEROUS BEGONIAS.

Begonias in beds have succeeded well this season, considerably better than for the past three years, owing probably to the plentiful rain which fell during the June and July months. Last summer some of the old scarlet Pelargoniums, such, for instance, as Vesuvius, Tom Thumb, Triomphe de Stella, &c., completely eclipsed the Begonias for bloom, notwithstanding the very little growth they made, while this season just the reverse is the fact. We planted out in the first week of June, and from the first the plants grew freely, quickly filled the beds, and throughout the whole of summer have presented a very charming appearance, the scarlet and pink varieties having been especially fine, and they, judging by their vigorous appearance, would have continued so but for the 3° of frost registered on the morning of October 3rd. This, however, settled them. Begonias are about the first to suffer in this respect, yet, so long as the tubers escape, it is of little consequence about the tops. Ours having been cut down almost close to the ground, we are now busy preparing them for their winter quarters. Our practice is only in common with that of many, but as we scarcely ever lose a single tuber during the whole of their resting period, it may be of use to some to give details of our practice. In the first place the tubers are carefully dug up, leaving attached to each a moderate ball of earth. These in their sorts are then transferred to the late Peach house to gradually ripen. In about a fortnight we remove the soil from the top, by which time the latter, as a rule, part readily. We do not immediately after removing the soil commence to store them, but allow them to remain in the Peach house for a few days longer, so that the tubers may get fairly dry, but not at all shrivelled. Each sort is then packed in boxes according to their various sizes. For this purpose we use boxes which hold about 100 to 150 tubers. At the bottom of the boxes is placed about an inch depth of moderately dry leaf soil on which is a layer of tubers barely touching each other, then more leaf soil, and so on, until the boxes are filled. We then place them in a cellar safe from frost, and in this position they remain till spring, and the bulbs keep as firm and as fresh as possible. Where these plants are much appreciated it is desirable always to have a fresh stock coming on to take the place of older ones, and this is best done by annually sowing seed taken from some of the best plants grown indoors expressly for that purpose. And I need hardly say to grow them satisfactorily in beds, and especially in dry seasons, the beds must be deeply dug and have an abundance of manure worked in, and during their growing season let them receive several good soakings of farmyard drainage water.—H. Markham, *Mereworth Castle Gardens.*

TOMATOES AT MARSTON.

Tomato crops have not been very abundant generally during the past season with regard to those grown in the open air, and the crop at the above garden has been no exception to the rule, although provision was made on rather an extensive scale for outdoor culture. But though the crop was thin outside, there has been a plentiful supply under glass, some grown in a heated pit and trained over close made hurdles proving very prolific. Fruits were cut from these that secured several first prizes at leading provincial shows. The fact of the light crops secured from open air plants suggested the idea of providing others for winter bearing, and I believe the success attending the effort on the part of Mr. Iggulden has been already given by him in the pages of the Journal ; but as the Tomato provides a crop of considerable importance of the present day, a few further remarks thereon may not be inopportune. Those under notice were surplus plants not required for outdoor planting, for which object large numbers were prepared, but when it was found the open air crops were setting badly, these, instead of being thrown away, were potted and placed under glass to encourage a free growth, and eventually they replaced the Cucumbers that had done duty for the summer. They are stood on the old Cucumber bed and allowed to root through. The vigour with which they grow and their freedom of fruiting is simply remarkable. A quantity of fruit has already been gathered and many others maturing, while quantities are in various stages of development, and a good supply will thus be maintained throughout the winter months. The plants had been freely syringed, often twice during the day, this evidently proving effectual in securing a good set, for I noticed as many as eight or ten fruits in a cluster. They are very short-jointed too, a distance only of about 9 inches or so dividing the numerous clusters.

Free ventilation is of considerable importance in the production of good crops of Tomatoes in winter, a high and close temperature only encouraging a too free growth at the expense of fruits. Cold draughts, however, must not be allowed, and a good warmth in the pipes coupled with judicious ventilation maintains a healthy and buoyant atmosphere, which, together with frequent syringings already alluded to, is the course that Mr. Iggulden has adopted with such excellent results. In maintaining a healthy root action frequent application of artificial manures are applied to the surface of the pots, and I know of none that so quickly attracts the roots to the surface as Beeson's manure, although others may have an equally stimulating effect.

Mr. Iggulden confines himself to one variety only at this season, that being a good selection of Large Red, and he is of opinion that while there are many good varieties now to be had, this variety still holds its own for all-round purposes, and is especially adapted for winter fruiting. Carter's Dedham Favourite, Reading Perfection, and Hackwood Park Prolific are among the best for summer and exhibition purposes, these being fully represented at seasons other than winter.—W. S.

ROYAL HORTICULTURAL SOCIETY.

A special meeting of the Council was held on Wednesday, October 31st, at 1 P.M., when it was resolved that a cordial vote of thanks be sent to all those who were kind enough to read papers, or to exhibit fruit, or in any other way to assist in making the late Apple and Pear Conference at Chiswick a success. It was resolved that a report of the Conference be forthwith prepared with a view to its publication as a number of the Journal of the Society.

The two resolutions passed at the Conference were then read and considered, and, with reference to the suggested Sub-Committee on Law and Parliamentary matters it was resolved, "That the Government having, at the suggestion of the Council of the R.H.S. and others, expressly included horticulture in the Bill for the establishment of a department of agriculture, it would be unadvisable to appoint a separate Law and Parliamentary Committee, the Council considering itself to be in a position to fulfil the duties of such proposed Committee more advantageously than a subsidiary body."

With reference to the second resolution of the Conference, relating to the Society's gardens at Chiswick, the following resolution was passed—viz., "That the Council of the R.H.S. fully appreciate the value attaching to Chiswick Garden, and are anxious to extend and develope its resources to the greatest possible extent in every direction for the advancement of horticulture as far as the means placed in their hands will allow." It was further resolved, "To invite the members of the present Fruit and Floral Committees, and also the principal exhibitors, to attend a meeting in the Council room on Tuesday, November 13th, at 11.30 A.M., to discuss as to the best place in which to hold the fortnightly meetings for 1889."

It was resolved to hold a general meeting of the Fellows of the Society in the Council room on Tuesday, November 13th, at 2 P.M., in order to submit to them the draft of new bye-laws with a view to their adoption. It was determined that at the two next meetings of the Society, on November 13th and December 11th, any tender plants may be placed in the Council room, where they will be free from exposure to cold.

By kind permission of the Master and Benchers, a grand flower-

Show will be held by the R.H.S. in the Inner Temple Gardens on the 30th and 31st May 1889.

It was resolved to contribute £10 to the funds of both the Auricula and Carnation Societies if their exhibitions are held under the auspices of the R.H.S. in the year 1889.

NOTES FROM A HERTS GARDEN.

THE fruit season is over—*i.e.*, all has been gathered and stored of what we had of Apples and Pears worth mentioning, for of all my gardening experience (and it verges on half a century), the year has been the most disastrous to hardy fruit. Never, perhaps, was the promise of an abundant crop so completely frustrated as it has been in 1888. There was a glorious show of Plum, Pear, and Apple blossom. The east wind brought caterpillars innumerable. They ate the tender leaves and petals, even the embryonic fruit, the devastation being most complete as regards the Apple, but the Plum and Pear did not altogether escape the ravager; yet the former had the curved leaves indicative of aphides, and Pear foliage gave early symptoms of blister. Apricots were simply stripped of leaves by grubs. Peaches and Nectarines had the foliage blistered and infested with aphides. Plums against walls had neither grubs nor aphides to anything like the extent of those in the open. Cherries had a few aphides, and which came as usual on the points of the shoots. Figs escaped alike leaf-eating caterpillars and red spider.

Bush fruits were attacked by bullfinches, and sparrows began to play havoc with the buds of the Gooseberry, Red and White Currants, though we had the bushes dusted with quicklime whilst wet, but it did no good or only temporarily, yet it cleared the bushes of moss with which they were infested, and we shot the bullfinches and strung the bushes with black cotton, "best six cord, No. 20," an effectual barrier against the sparrows. We had no caterpillars; the Cuckoos kept the bushes free. In result we had a very full crop of Gooseberries and Currants, but of the latter fully half decayed through the continuous wet weather, and to keep any by matting or hexagon netting was practically excluded. Otherwise we have Currants for use with the October Raspberries. Black Currants swelled to an enormous size. Raspberries were neither good in crop nor quality. Heavy clay soil does not suit Raspberries, at least that is a convenient way of making an excuse when anything goes wrong—*i.e.*, it is the soil or the season, always something other than the treatment, and the fact in this case is the Raspberries had been strangled by Bindweed, and they are now recovering, have made very much stouter canes, and it is only sturdy canes with plump buds well ripened that afford fine fruit in quantity. I find mulching Raspberries with fresh manure about the time of flowering the best plan. Our summer Raspberries not being very good I took advantage of some rows of October Red, that were just as good as the summer were bad, to leave a 30-yards row for fruiting in summer, merely thinning the canes out, the other being cut down in the usual manner for late summer or autumn fruiting. The canes fruited well during the summer, and stood the wet better than the summer varieties, and the young canes are just as strong now (October 26th), and showing fruit equally free from the points of the canes as that of those that were cut down to the ground. In fact, there is not a particle of difference; both may fruit up to Christmas if the weather permits. As the October Raspberries fruit from the extremity of the cane, it is only necessary to cut away the fruited part, leaving the other for summer fruiting, and by cutting back or to the ground a portion of the canes we have strong canes for autumn.

Strawberries have been good in crop, not a plague of any sort having infested them. The fruit was late and dreadfully spoiled by the rain. We have tried nearly everything for keeping the fruit off the ground, and find nothing better than stable litter put between the rows and plants at flowering, or soon after. There is nearly sure to be a good rain to wash the virtue of the litter down to the roots and cleanse it sufficiently for the fruit to lie on. It answers its purpose as far as the fruit is concerned, and it is nearly all gone by autumn, and where it has gone the plants show by the plumpness of their crowns. It certainly has not been evaporated, or only by the Strawberry leaves, which have taken good care to store the assimilated matter or essence of the manure in the plants for the opening of another season's campaign of fruitfulness. We have several sorts—Black Prince, King of the Earlies, La Grosse Suerée, Vicomtesse Hericart de Thury, Keen's Seedling, Sir Harry, Noble, Eureka, Mr. Radclyffe, James Veitch, President, Sir Charles Napier, and Dr. Hogg. Black Prince, King of the Earlies, and La Grosse Suerée must be cut out, also Keen's Seedling, Sir Harry, Noble, Eureka, Mr. Radclyffe, James Veitch, and Sir Charles Napier, which will leave Vicomtesse Hericart de Thury, President, and Dr. Hogg, which last I would also exclude, only I cannot do so on account of its British Queen flavour, and have instead Sir Joseph Paxton Those—viz., Vicomtesse Hericart de Thury, President, and Sir Joseph Paxton are the best three croppers with quality as well, and Sir Joseph Paxton is very much the best in every way of the three, both outdoors and forced. If confined to one Strawberry I should select Sir Joseph Paxton, and the reason it was not mentioned in the first place is because it deserves particular note for its freedom of growth, cropping, and usefulness. By having it on a south border in the open, and on a north border it can be had as long as most persons care to have Strawberries, and I put it forward as a crucial test whereby to get rid of so many varieties, which not only perplex the cultivator, but are from a profitable point of view cumberers of the ground. For forcing La Grosse Suerée, Vicomtesse Hericart de Thury, President, Noble, Sir Joseph Paxton, Sir Charles Napier, and Dr. Hogg; of all those Sir Joseph Paxton, except for early work, is a long way the best.

Peaches and Nectarines outdoors are unprofitable so far as I can see. The trees on a south wall are not healthy; indeed, they are gummed; were blistered, aphis laden. On a west wall the trees are very much healthier, but the fruit has not near the size nor anything of the quality of that grown in a wall case with the same aspect. There was not a Peach worth the name this year outside.

Apricots do fairly well on a south aspect, Royal and Hemskerk being best; Kaisha and St. Ambroise are also good. Moorpark is very much gummed, very considerably more so than Peach, which is certainly one of the finest, if not the choicest, of Apricots. The blossom of Apricots were puny, and it set very badly. Then the "leaf-roller" came in force and denuded the trees of foliage. Picking and squeezing is very well to talk and write about, but it is quite another affair when you have to manage to get through two men's work with one pair of hands, and the labour question is really the "burning" one in gardens; besides it was no use last spring contending with the caterpillars, which not only stripped the fruit trees, but the majestic Oak and lightsome Ash were practically denuded of their first foliage. It is truly astounding to witness the might of numbers, and not less so the recuperative power of trees. Caterpillars do not live for ever—the trees rid of them per force of Nature—put forth foliage anew, so that there is some prospect of fruit another season, the Michaelmas summer clenching the argument in favour of the development of fruit buds and the maturity of the wood. As regards the Apricots, they are none the worse; indeed, they were over-luxuriant, and that the grub infection has counteracted, but I have no faith in Apricots ever being grown profitably in this country without means of entrapping the sun and retaining its heat inside a glass house. To grow fruit on the old lines—*i.e.*, without regard to cost of production is obsolete.—UTILITARIAN.



NEW CHRYSANTHEMUMS.

THE demand for novelties still continues as briskly as ever, and the nurserymen make corresponding efforts to obtain what the public require. It is well known that the continental growers are alive to this, but unfortunately, to say the least, they do not exercise the care in selection, naming, that purchasers have a right to expect. The consequence is that every season novelties received in this country necessitate a thorough trial before they can be recommended. This year we have already noted in one establishment several instances of this kind, and in both we believe the plants were received from M. Délaux. One of these was the variety Lincoln's Inn, recently certificated, which, as received here, is identical with Lakmé, sent out several years since. The other case was that of a so-called new Anemone, M. Castex, which is indistinguishable from Nouvelle Alvéole. We are not wholly free from such accidents in this country, for Marquis of Downshire, shown and certificated last year, seems to be simply the earlier dark stage of W. Robinson.

With regard to the Japanese varieties sent here from Japan and the United States, there appears to be a most lamentable confusion, and little doubt exists that some of these have received two, or even three, names. It is evident that the American introductions must be closely watched if our own nurserymen are introducing direct from Japan also, but the transatlantic importers have a great advantage. A gentleman who has had ample opportunity of ascertaining the accuracy of the statement, informs us that a large number of the American Japanese novelties are obtained from a lady in San Francisco. It is said that the

husband of this lady was for some years a resident in Japan, where he became one of the most successful amateur cultivators of the Chrysanthemum. Since his death the widow has resided in San Francisco, and numbers of seedlings raised in Japan have been sent to her at various times, these being distributed amongst the American tradesmen under numbers only, so that each one has named them as they flowered. Such a proceeeding must necessarily lead to some confusion and the multiplication of synonyms.

Comparatively few seedlings have been raised in this country yet, those obtained by several persons in recent years should have encouraged farther experiments. Messrs. J. Laing & Co., Forest Hill, were fortunate enough a year or two ago to procure some well selected and thoroughly matured imported seed, and from this they secured such favourite varieties as Mrs. J. Wright, Agnes and Bertha Flight, Album Fimbriatum, Stanstead White, and Alpha. From a subsequent batch they have raised several others, and one of these is Stanstead Surprise (fig. 49), a dis-



FIG. 49.—CHRYSANTHEMUM STANSTEAD SURPRISE.

tinct Japanese, certificated by the Floral Committee of the National Chrysanthemum Society on October 24th last. It has large blooms, the outer florets in the older examples drooping and curling, rich rosy crimson on the upper surface at first, fading to pink with a silvery reverse. The blooms come early on the crown buds, but they keep well, and some that have been out for fully three weeks have not lost all their charms yet. Terminal buds are coming later, and seem likely to be right for the shows.

CHRYSANTHEMUM WM. HOLMES.

The enclosed bloom is one of seven, all the same size, grown on a plant under 3 feet high including pot, with good healthy foliage.

The bloom is much past its best, having been out over a month. However, I trust it will arrive in sufficiently good condition to enable you to form an idea of what it has been. Its measurement at the time of sending is, circumference 19½ inches, height 5 inches. The box, unfortunately, is too small, but should it not arrive in fairly good condition, will be pleased to send you another. Should it be deserving of merit possibly you will mention it in your next issue of the Journal.—F. C. Barker, *Ipswich*.

[The bloom arrived in good condition, and is an extremely fine example, the size being fully that given by Mr. Barker. The characters of the variety are also capitally displayed by 800 plants in Mr. Stevens' nursery at Putney, and the grower says as the result of his experience, "William Holmes must not be stopped." Upon stopped plants the blooms are much lighter in colour. The centre florets a kind of bronzy orange, quite distinct from a well-developed later bloom, which has the upper surface of the florets of the brightest crimson hue, the lower surface a beautiful golden bronze.]

CHRYSANTHEMUMS AT MAIDENHEAD.

Taking an interest in Chrysanthemums, I called on Mr. Owen at the above nursery a few days since to inspect his collection, including many new varieties, all of which I saw a month previous in a very promising condition. Unfortunately, Mr. Owen's plants suffered terribly the early frosts, 13° being registered here on the night of October 2nd. A few plants only had been housed, some of the new varieties amongst them. This is the second year Mr. Owen has unluckily missed flowering several promising new seedling and other varieties through destruction of his plants, or at least their buds, by frost.

Of those now in flower, taking the Japanese as most numerous first, I noted two especially that promised to make large exhibition blooms—George Daniels, a new seedling variety, blooms 9 inches in diameter, the florets reflexed, and three-quarters of an inch in width, colour silvery white, the under side lined with deep rose; Fimbriatum, delicate pink, lighter centre, large distinct flower. Also very good were Florence Percy, milky white; Alcyon, rosy amaranth, silvery pink reverse, shape of flower resembling that of M. Freeman; Elsie, creamy white, very pretty; Avalanche, fine pure white; Gorgeous, deep yellow; Sarah Owen, the fine bronze sport from Madame J. Laing; Holborn Beauty, good lemon yellow; Anatole Cordonnier, of dwarf habit, flowers dark amaranth, with long narrow florets; Priscilla, salmon red shaded bronze; and Gordon, peach pink, pretty. A variety sent for trial, and named Miss Burgess, proved to be the old Japanese Bouquet Fait, odoratum, dark purple, highly scented.

A new reflexed variety, James Carter, bronzy yellow, promises to be an acquisition in this class.—C. H.

THREE USEFUL CHRYSANTHEMUMS.

We have found the three following grown in quantity extremely useful for general decorative purposes during October, and many are still in good condition. Madame C. Desgrange, white; and G. Wermig, yellow; these two are well known. The third, Roi des Précoces (Jap.), dark crimson, makes a fine contrast; the flowers are not large, but are produced very freely, and the plant is of dwarf habit. Late-struck cuttings give good heads of flower on plants not more than 1 foot high in small pots.—C. Herrin, *Dropmore*.

CANKER IN APPLE TREES.

I read with interest the other day a discussion whether this canker is disease or the consequence of uncongenial soil and imperfect nutrition. I should be glad to give my experience of an Apple tree. Last autumn I had a young tree (Peasgood's Nonesuch) given me by a neighbour five or six years old. It was very badly cankered in six places. We transplanted it carefully. My garden, though adjoining, is very different in soil to that whence the tree came. We transplanted it early in October. Early work does best for us. We cut off the leading shoot, it was so badly cankered. From the other five places we cut out all cankered matter (in some very deep), then covered the spots with clay, enveloped it in brown paper, and tightly secured it to keep them free from exposure. This year the tree has borne well. We had thirty Apples on it, twenty of them fine specimens, and some of them on the cankered branches. I exhibited five at the Pomological Show in Exeter last month, and not only took the first prize in the class, but the Apples were pronounced the finest fruit in the Show.

We have since uncovered the diseased parts, and find them recovering health, and new bark forming over them. The tree looks healthy, the bark bright, and good promise for next year. We have followed the same plan again with the tender spots. I think these facts may be of interest in the study of this question.—Henry Bramley, *Uffculme Vicarage, Devon.*

CLETHRA ARBOREA.

It is surprising this valuable shrub is not more grown. Plants are seldom seen, and good specimens are rarely heard of, but it merits being classed amongst the best of half-hardy shrubs, and at this season I do not know any shrub, hardy or exotic, that can equal it in beauty and usefulness. We have several specimens here. They are grown in boxes like the Orange trees, placed in the open air with them in May, and brought into a cool house in October, and they succeed admirably with this treatment. Our largest plant is a little over 3 feet in height and 10 feet through, and when this tree is clothed with its beautiful white spikes of blossoms, as it always is in October and November, it is a most pleasing sight. It is commonly called the Lily of the Valley Tree, and the blooms are suggestive of that charming flower both in the spike, form, and fragrance. Our trees have been in bloom since September, and they will continue so for some time yet. Two years ago we planted a small specimen out in the open. The frost destroyed the points of the shoots, but the main stems were not injured, as they emitted young shoots freely in spring, and although it is not absolutely hardy, it is nearly so. Apart from this point it is such an excellent autumn and early winter-flowering tree for the greenhouse and conservatory that to grow it for the decoration of either of these structures will amply repay all cultivators.

Small plants flower freely, and in proportion a plant in a 6 or 8-inch pot will produce as much flower as one in a tub 4 feet square. They root freely, and a mixture consisting of loam, a little manure, and a quantity of sand will grow them well. They bear cutting. When in bloom we cut armfuls of flowers, with some wood attached, from them, and if a plant was becoming too tall it might be cut partially down with the result of securing a more bushy plant. We keep them somewhat dry in the winter, but water freely at other seasons. I have never known this Clethra to be infested with insects, and fighting against these is not an operation to be included in their culture. When grown in pots they should be placed out in the open air during the warmest part of the summer, as it is important that the wood should be well ripened before they begin to flower.—J. Muir, *Margam, S. Wales.*

GRAPES SCALDING.

My best thanks are due to Mr. Combe for trying to set us right and clear away the difficulties respecting this important subject. Both Mr. Young and Mr. Riding are very anxious to bring me back to the point where they first differed from me. They evidently regard what they characterise as "fancy" and "pure theory" as a strong point in their arguments. I have no doubt that your correspondents would have been highly delighted with Mr. Combe's letter had he not added his last paragraph, in which he ventures his opinion "that all Grapes are liable to scald if proper precautions are not taken to prevent it." In my first letter, page 162, I said this would be the case if necessary precautions were not taken—the difference is not a great one. By continually carrying me back to this point your correspondents, with the exception of Mr. Combe, have clearly proved at least two things—first, that they have been relying upon somebody's theory or practice to carry them safely over the period when Lady Downe's is most likely to scald without taking the trouble to investigate the matter very deeply themselves. If they have succeeded, well and good. Secondly, by singling out Lady Downe's as an exception amongst Grapes that will scald, they have regarded the evil of scalding with this particular variety as constitutional. They wish to repudiate this, but the line of action they have taken leaves room for no other conclusion.

Had they not been so certain in flatly denying what I stated to be a fact, I might have given the grounds upon which I was warranted in making this statement—"It is no more difficult to scald the berries of Black Hamburghs and Madresfield Court than those of Lady Downe's," and I have since added all other varieties of Grapes. I venture to assert that the man who can render the conditions of a house suitable to scalding Grapes can also avoid such a catastrophe. Long ago I discovered how to do this with certainty. I did not experiment on a house of Grapes and run the risk of failure in maintaining the supply, but with a few that were provided for the purpose. The varieties tested were Black Hamburgh, Foster's Seedling, Madresfield Court, Alicante, Alnwick Seedling, and Muscat of Alexandria, but the last I shall exclude because it failed to show bunches. Without it the list is a fairly representative one. The berries of every one of these scalded; the Alicante was the worst, then Black Hamburgh, while Alnwick Seedling had the least number of scalded berries. Before this was tried I had grave doubts whether the scalding of Lady Downe's was constitutional or due to defective management. I have had no doubts on the subject since.

It has been highly amusing to note the conclusions at which your correspondents have arrived; they evidently believe that the Grapes I grow are in a pitiable condition by scalding, for in Mr. Young's last letter he advises me to alter my practice. At present I have no occasion to do so, and the illusory conclusion at which they have arrived may be removed when they are informed that during eleven years I do not think I have lost by scalding more berries than would amount to two good bunches, setting aside those subject to experiment, including this year, and although I have lost several berries I do not perceive one bunch that has been actually spoiled.

Until I consider Mr. Combe's letter I will leave the Grapes with which I am experimenting. It may be remembered by the observant readers of the Journal that I once ventured to think in a discussion on non-ventilating that early Grapes and Peaches could be grown as well without opening the ventilators as by doing so on the orthodox principle. This may be regarded as foreign to the subject of scalding, but such is not the case, for it bears very largely on that point that your correspondents are so anxious that I should clear up. I had tried the non-ventilating principle for Grapes and Peaches when I ventured to make that statement, but for the present I shall only allude to the Vines. The first season I tried it we commenced cutting on the 7th of May, and the season was a favourable one for this system of culture. Some young Vines were grown on the east side of the house (span-roofed) for fruiting the following season, and they made splendid wood and particularly large leathery foliage. These young Vines did remarkably well the following season, but the season was a very different one, much brighter and warmer, and not so favourable for carrying out non-ventilation with safety. All, however, went well until the stoning period, when the berries scalded badly. Slight shading has been tried during this critical period, and yet scalding took place. No harm occurred to the foliage or Grapes before or after the stoning period, and the temperature was as high by sun heat, and as moist before, and often higher afterwards. Condensed moisture was on the berries in the morning on many occasions during stoning, before and after, but harm only was done during the time of stoning. The small globules of water disappeared from the berries as the temperature rose, and I concluded were absorbed by the atmosphere. Thus the conclusion that scalding might occur by the vapour being overheated and the Vines being overforced at that particular time.

For the present I will leave them to look at Mr. Young's last letter, for he says I have had my answer in his statement that it requires "gross carelessness" to scald the Black Hambugh. I have said before, that if this is the case it is equally so to scald the berries of Lady Downe's. Mr. Riding jumps at the conditional admission I have made him as a strong point attained. The condition of admission is that it is "gross carelessness" to scald Lady Downe's. What do you gain? Mr. Young asks me to carry out, however, in the last four lines of his letter to prove his point what I should regard as "gross carelessness" in the management of Lady Downe's or any other Grape during the critical period of stoning. He wants me to bring about a condition I have repudiated more than once, and strikingly so in my last letter. I cannot perceive any treatment more calculated to scald Grapes. It is the results that follow such treatment that bring about the evil that I have been trying to warn cultivators to avoid.

Mr. Riding tried to show that Mr. Simpson was wrong because he agreed with me that Black Hamburghs would scald, and he added particularly in a cool house, or where very little fire heat was used. I fully agree with Mr. Simpson, and I should look for scalding under these conditions, because considerable moisture would be condensed on the foliage and berries at night, and the anxiety of the cultivator to take every advantage of the sun to hasten forward his crop would thus bring about the conditions Mr. Young wishes me to try, and the cause that scalded the berries on the Vines subjected to the non-ventilating principle as well as those experimented upon.

I said on page 320 the condensation of vapours may be due to three causes—cooling, compression, and chemical affinity. I gave briefly condensation by the first, because I firmly believe that moisture on the berries is deposited more frequently by this means than any other. To avoid even this state of things I have twice advised the raising of the night temperature with the most liberal ventilation during the day. Although I think no harm results from moisture being condensed on the berries, I wished to direct cultivators to avoid at that critical period such a state of things as far as possible for fear of the evil consequences that might follow any mismanagement in ventilation. Although we have the Vines under artificial treatment, I do not see that the accepted law of condensation and evaporation need be upset. If we grow Vines without opening the ventilators condensation by compression takes place. The berries will stand this before and after the stoning period, but not while they are stoning without the berries scalding. My idea is, and what I intended to convey, by harm resulting from the artificial treatment to which Vines are subjected in my last, was negligence in not encouraging evaporation to go steadily on as the temperature increased. Heat being the agent of all evaporation, I believe the conditions of the atmosphere externally at the season of the year when Lady Downe's is stoning to be highly favourable to promote rapid evaporation. The cultivator has also within his power the chance of changing quickly the atmosphere of the house. The quantity of vapour in the atmosphere externally at the time might favour or retard evaporation; but, in most cases the former. At that season of the year, with careful management, the Grapes need not be subjected to a thorough "sweating" after the temperature has commenced rising.

I agree with Mr. Combe that a slightly drier atmosphere in the house is an advantage; this, combined with the night temperature, I have advocated, and liberal ventilation from early morning until the temperature has declined sufficiently for closing would render Grapes safe against scalding. It is this condensed moisture that cannot be evaporated from the berries that ends in scalding when the Grapes are grown without ventilation. This was the means by which I succeeded in scalding Grapes. It is not necessary to keep the berries subjected to such artificial treatment for any great length of time each day to accomplish this thoroughly. I have observed even early in the season when the atmosphere has been changed by the admission of air that the moisture deposited on the berries soon disappeared and they became dry as far as I was able to detect.

This "sweating" system does not injure the leaves or the berries before or after stoning; in fact, the foliage does not suffer during stoning while the berries scald. I am therefore willing to admit that if the berries "stewed" as I stated they would be equally liable to do so in any stage, the foliage as well. Cucumbers grown on the non-ventilating system are covered the whole day through with moisture, and I have often seen it drop off them. During the hot weather of last July what was formerly the stove here had Cucumbers in it, and when the door was opened vapour could be seen rushing out like a cloud of smoke. At times the house was quite misty from the amount of vapour in the atmosphere, and yet the foliage and Cucumbers took no harm. The fruit was certainly much lighter in colour than those grown under more natural conditions. Let the atmosphere once become dry, if only for a very short time, and the foliage will not be long before it is scorched.

The temperature rising by sun heat while the house is closed cause condensation to take place in consequence of the pressure of the atmosphere; the moisture on the berries becoming heated through slow evaporation is not to my mind the sole cause of scalding. This, combined with the conditions that bring about this state of things prove too forcing for the Vines at that particular time. If not, perhaps Mr. Combe or somebody else can explain why Grapes are an exception in this respect.

Now for the syringing. Why did I qualify the statement by saying "I do not believe in such a practice, because it is liable to injure the bloom?" For this simple reason, because I have always succeeded in keeping down red spider without following any such plan, but more particularly because the water that has to be used in many gardens is of such a nature that it would leave a deposit on the berries and spoil their appearance. I could not recommend the practice generally, because I know the water is of such a nature that, while one might do it with safety, a score or more might and would spot the berries. The Grapes I saw, and to which I alluded, were perfect enough as regards the bloom, and I did not observe that any of them were spotted.—WM. BARDNEY.

CULTIVATION OF THE PEAR ON WALLS.

[Read by Mr. A. Pettigrew at a meeting of the Young Men's Improvement Society in the Castle Gardens, Cardiff.]

THE Pear can be had, by proper selection of varieties, in good condition for dessert for eight months in the year. The tree will grow in almost any kind of soil, but it attains the greatest perfection in a deep rich well-drained loam, and if other conditions are favourable, it will continue to be fruitful and in vigorous health for fifty years or more if properly attended to. Standard trees growing in open quarters live to a much greater age than wall trees, and continue to bear good crops for nearly 200 years; but the fruit, as a rule, is not so good in quality, nor the crops so certain, as those from wall trees.

The best situation for the Pear is one having a south aspect. If the soil is inclined to be wet it must be thoroughly drained, and if exposed to storms, it may be sheltered by means of plantations at some little distance off. In making wall borders they should be as wide as the wall is high; they may be broader or narrower according to circumstances, but, as a rule, they should never be less than the height of the wall, and 3 feet in depth.

Pears can be grown successfully on south, east, west, and north walls (by a proper selection of varieties) but not on a north aspect in the north of England, nor in Scotland, where the climate is too cold and damp for them.

Plant the choicer varieties in the south, and the early varieties in north aspects, but by planting a few early varieties in the south, east, and west aspects, the season of the particular varieties thus planted will be prolonged by those growing in the north, which will ripen much later than the others planted in the aspects mentioned.

The south, east, and west aspects are good, and may be planted with the best varieties, and the late keepers which take a long time to ripen after the fruit is gathered and stored. For example, the walls in the garden here are covered with two or more of the following varieties, and the trees, with the crops they bear annually, will compare favourably with trees of the same varieties growing in any garden in the country.

Trees on south aspect—Beurré Diel, General Todtleben, Bergamotte Esperen, Marie Louise, Beurré Bosc, Glou Morceau, Beurré

Magnifique, Easter Beurré, Williams' Bon Chrêtien, Pitmaston Duchess, Beurré d'Amanlis, Jargonelle, and others. West aspect—Pitmaston Duchess, Beurré Diel, Brown Beurré, Gansel's Bergamot, General Todleben, Doyenné du Comice, Easter Beurré, Jargonelle, Louise Bonne of Jersey, Beurré d'Amanlis, &c.

North aspect—Jargonelle, Louise Bonne of Jersey, and some others which are not suitable for the position, but which were planted partly to cover the wall, and to train trees to plant elsewhere. The Jargonelle and Louise Bonne of Jersey do fairly well, and I have no doubt Beurré d'Amanlis and some other early varieties would do equally well, and lengthen the season of these varieties considerably,

In selecting the trees ascertain the number required, and write a list of the varieties which you intend to plant, and select them for yourself in the nursery. Maidens worked on the free stock, one year from the bud, are preferable to two and three years old trained trees which have been cut back several times in the nursery to keep them small and in saleable condition. See that they have straight clean growths with plump buds and well ripened wood, and that the scion and stock are perfectly united.

The trees should be lifted as carefully as possible not to injure the roots, and packed immediately after to keep the small fibrous roots from drying, and planted in their permanent quarters as soon after as possible. Before planting cut off the ends of any of the injured roots, and the extra strong ones shortened to induce them to send out fibrous roots, which are better for nourishing the tree than strong tap roots that penetrate deeply into the earth. Level the surface of the border before planting, especially at the bottom of the wall. If this is not done at first there is a probability when the trees are planted of some of them being deeper than they should be when the border is levelled afterwards. In planting fruit trees young gardeners are apt to make a mistake in planting them too deep through inexperience. As a rule they must never be planted deeper than they were when growing in the nursery lines, and the stem not less than 5 or 6 inches from the bottom of the wall to allow of it swelling afterwards. Make the hole large enough to allow of the roots being spread out to their full length all round, and fill the soil in carefully to the top before it is tramped. After it has been firmly trodden all over and levelled mulch the surface with manure to exclude air and to prevent evaporation from the soil. Prune the trees to a good bud about 14 inches from the ground, and then make secure to the wall. The best time to plant is as soon as possible after the leaves have fallen in the autumn, but planting may be continued in good weather from then on to the middle of March.

To grow handsome fruitful trees they require a great amount of attention in training when young, and no one need expect to succeed in forming well-balanced trees unless this is done, both in pruning, nailing, stopping lateral shoots, and disbudding, until the trees have furnished the walls with branches. Good maiden trees with well-matured wood will produce from four to five branches the first year after planting.

If the branches are well placed, they may all be retained, taking the one in the centre for a leader, and the other four, two on each side, to form the base and permanent branches. There are several modes of training the Pear tree on walls, but I prefer the fan-shape to all other methods practised, both for appearance and fruitfulness. In nailing or tying the branches, care should be taken to give them plenty of room to swell. I have known many trees ruined when young through the young men nailing them too tightly. They never thought of making sufficient allowance for the branches to develop, and the string or shreds cut through the bark and rendered them useless.

In training when the trees are young all the branches must have an upward tendency for a few years before they are placed into their permanent positions. When nailed into their proper places at once it retards the flow of sap in the lower branches, weakens them, and injures the whole tree by the leader and upper branches absorbing the sap and causing them to make strong gross unripened wood, which is useless for building up a fruitful tree.

The leading shoot should be pruned to 14 inches or more from where it started, according to its strength, and a nick cut through the bark above each of the side buds required to form branches to induce them to break into growth. The permanent branches should never be cut back unless the tree is bare at the bottom or the wood at the extreme end of it is not thoroughly ripened, or if it happens to be a fruit bud at the end, which is often the case, it is then cut back to a prominent leaf bud and well ripennd wood.

In the spring after the trees have started into growth examine them carefully, and all the buds on the leaders which are not required may be rubbed off. If more than one starts from the terminal bud of the permanent branches remove all except the strongest one and two or three of the buds on the branch immediately behind it taken off as well to strengthen the terminal growth.

As the shoots grow nail them in to prevent their being broken by wind. A tree may be built up very quickly if it makes strong healthy growth early in the season by stopping the leading shoot, after the wood is about three parts ripe to 14 inches in length, when it will throw out a double set of branches and a new leader in one season, and ripen them well, if the weather continues good. But, as a rule, it is not advisable to adopt this method with all trees, nor in all seasons. If the trees in the second year after planting are inclined to make too vigorous growths they must be lifted carefully and root-pruned. which will check the growth and bring the trees into fruiting, after which they will not require root-pruning for a long time.

The building up of a tree consists in pruning the leader and training the new branches until the wall is covered, and in stopping lateral growths or breastwood during the summer, and pruning them in autumn when the leaves have fallen to within two buds of the branches to form fruit spurs. If the trees become infested at any time with scale, which they are subject to, they should be syringed with a mixture of petroleum and water, which will kill it without injuring the trees if done soon after pruning, or at any time during the winter when the trees are dormant.

To make sure of obtaining a crop of fruit the trees may be protected during the time they are in flower, and also when the fruit is nearing maturity, against the attacks of birds.

Mulch the border at the bottom of the wall with rough litter from the stable all the year round. It is good for the roots of the trees, and it is better for walking on in all seasons than the bare earth.

PRUNING FRUIT TREES.

It was with great interest that I read in last week's Journal the remarks on the above subject at the Chiswick Fruit Conference by Mr. Shirley Hibberd, and it is practically the key of profitable fruit culture in this country as much as suitable varieties or good soil. In common with other gardeners I have been very much impressed by the ignorance displayed by many gardeners in pruning fruit trees, their ideas on this subject being next akin to "pollarding." Remarks of this nature are generally attributed to the young gardener, but I think a large percentage of the "old" may be placed in the same category. Of course, whether the trees are Apples, Pears, or Plums, the trees must be pruned during the first few years of their existence, as explained by Mr. Bunyard, so as to lay the foundation, but after that each variety will attain a contour peculiarly their own, with a little rational pruning occasionally to balance growth or to prevent crowding. With Gooseberries a course of pruning is necessary, but this must not be carried to the extent as practised by many gardeners. The best course with these is to encourage as much young growth as possible, cutting out all old bearing wood where it can be done with advantage, so as to allow light and air to play amongst the branches, and to allow free access for gathering. A clear stem must be encouraged, "sucker" growth being very objectionable to the Gooseberry. With Black Currants a continual supply of young wood must be encouraged up from the bottom, merely cutting out old and exhausted wood, or to keep the trees open. —A. Young.

CHRYSANTHEMUM SHOWS.

We shall be obliged if those of our friends who favour us with reports of shows will, as far as is practicable, give full list of varieties in the first prize stands in the chief classes.

HAVANT.

The fifth Exhibition of Chrysanthemums, fruit and vegetables was held at Havant on Wednesday, 31st ult., and, notwithstanding the defects of the growing season, proved to be the most successful Show held by this Society. The Havant Show always has additional interest in the splendid collection of vegetables and fruit which form a separate show, and materially add to the popularity of the Society in the district. Japanese Chrysanthemums were fully up to the average of former years, while the incurved showed a marked advance. Other sections were not quite so good.

Among the Japanese many fine specimens were staged of such varieties as Martha Harding, rarely seen so fine; Avalanche, Florence Percy, Edwin Molyneux, Mr. Garnar, and Mdlle. Lacroix. Many complaints are heard of the blooms damping, which seems to be general throughout the country this season. It is to be hoped that after the shows are over some discussion may take place as to the probable causes of this.

In the class for groups of Chrysanthemums some remarkably fine banks were arranged, the quality being good throughout. Mr. W. Roberts, Havant, was first, closely followed by Mr. W. S. Moseley, gardener to John Taplin, Esq., and Mr. J. Agate, florist, Havant. The date of the Show proved too early for specimen plants, and only brought one exhibitor, Mr. N. F. Fuller, The Gardens, Idsworth. The loss to the Show in this respect was fully made up by the pretty and interesting group of Pompons, in which there was a sharp competition,

Mr. J. Agate securing the first prize, followed by Mr. W. Roberts and Mr. H. Garnet.

In Class 1, for twenty-four cut blooms, distinct, twelve Japanese and twelve incurved, the premier award fell to Mr. C. Penfold, gardener to Sir F. Fitzwygram, Bart., Leigh Park, who staged fine massive blooms. Mr. A. Payne, gardener to Mrs. Smith, Emsworth, being a good second, and Mr. W. C. Moseley, third. For eighteen cut blooms Messrs. W. Roberts, J. Agate, and W. Covell, gardener to J. A. N. Martin, Esq., West Leigh, secured the prizes in order named. Twelve Japanese, distinct, first, Mr. A. Payne; second, Mr. C. Penfold; third, Mr. W. Moseley. Twelve incurved, distinct, first, Mr. C. Penfold; second, Mr. W. Roberts; third, Mr. W. C. Moseley. Twelve Anemones, six varieties, first, Mr. R. Woodfine; second, Mr. W. Roberts; third, Mr. N. F. Fuller. Twelve reflexed, six varieties, first, Mr. C. Penfold; second, Mr. W. C. Moseley; third, Mr. A. Payne. Twelve Japanese Anemones, four varieties, first, Mr. C. Penfold; second, Mr. A. Payne; third, Mr. W. Moseley. Twelve sprays Pompons, first, Mr. W. Roberts; second, Mr. J. Agate; third, Mr. N. F. Fuller. Various smaller classes were all were filled, Mr. J. Horril showing exceedingly well.

For collections of vegetables, eight distinct varieties, Messrs. W. Long, F. Suter, and S. Solomons took prizes in order named. Special prizes offered by Messrs. Sutton & Sons, Reading, brought a spirited competition, the awards going to W. Salt, F. Suter, and N. F. Fuller. Special prizes offered by Messrs. Davis & Jones, Camberwell, proved an interesting feature, being for best single specimens of certain varieties, Miss Annie Lowe being well shown by J. Horril. Only one bloom was shown of Edouard Audiguier, but several very fine blooms were staged of Florence Percy, which attracted much attention.

SOUTHAMPTON.—November 1st and 2nd.

This Society as usual held its annual Exhibition in the Victoria Skating Rink, a capital building for the purpose, being light and agreeably warm for the various kinds of exotics exhibited. Notwithstanding the conditions under which the schedule was issued—namely, that the prizes would be paid in proportion to the amount of the receipts, a splendid show was the result, thus proving that exhibitors have the interest of this popular southern Society at heart. Considering the earliness of the date and a late season the Show was remarkably good, competition being unusually keen in the cut bloom classes, while the specimen plants and groups left little to be desired. Apples and Pears showed a decided falling off in numbers owing to the season. This defect was amply atoned for by the large array of Grapes exhibited, all being of good quality, some especially so. Vegetables were, as they always are at Southampton, a splendid show, while groups of plants and other miscellaneous classes were well filled. The Show was crowded with visitors as soon as it was opened. Excellent order prevailed thanks to Mr. Fuidge, ably assisted by a good working Committee.

Plants were arranged down one side of the Rink in a sloping bank, causing an effective display, while the groups were arranged at the end. For the best collection of Chrysanthemums, arranged for effect, occupying a space 10 feet by 6 feet, there was only one entry from Mr. G. Beesby, gardener to F. Willan, Esq., Thornhill Park, Bitterne, Southampton; the plants were dwarf, carrying large solid blooms with good foliage and well arranged. For a collection occupying a smaller space, 7 feet by 6 feet, Mr. Osborne, gardener to J. Buchan, Esq., Southampton, was easily first, the plants were very dwarf in the front, while those at the back reached only 4 feet 6 inches high; good foliage and bloom combined with a neat arrangement completed a meritorious group. Mr. J. Jones, gardener to C. A. Day, Esq., Terrace House, The Polygon, was a good second. For four plants incurved or reflexed, also for four specimens distinct varieties, also for a single specimen Japanese, Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, took leading honours with specimens, large, well trained and well flowered, although some few required a little more time to develope their blooms, Dr. Sharpe being most conspicuous for its quality. For four Japanese plants, distinct varieties. Mr. W. Joy, nurseryman. Shirley, Southampton, was an easy first with grand specimens of Madame Bertie Rendatler, Bouquet Fait, and Lady Selborne, fully 5 feet through, and covered with flowers.

Cut Blooms.—These formed the most imposing part of the Show. The competition was very spirited, over 1000 blooms being staged, while for the earliness of the season the quality was very good. In the leading class for twenty-four blooms distinct varieties, twelve incurved and twelve Japanese, eleven growers competed for the first prize of £5. Mr. E. Molyneux, gardener to W. H. Myers, Esq., J.P., Swanmore Park, Bishop's Waltham, was easily first, staging in his accustomed style grand blooms of Japanese varieties, while the incurved specimens were solid, fresh, and well finished, though not over-large. The stand of Japanese blooms was remarkable, four first-class certificates to new varieties in it, while in addition it contained the premier bloom of the Show in any section, a grand specimen of Edwin Molyneux, 7½ inches wide and 6½ inches deep, richly coloured. Commencing with the back row, and reading from left to right, the Japanese blooms staged were Edwin Molyneux, Baronne de Prailly, Frédérick Marrouch, Madame C. Audiguier, Avalanche, Val d'Andorre, Madame Laing, Mrs. Falconer Jameson, Golden Dragon, Mr. H. Wellam, Boule d'Or, and Florence Percy. Incurved: Empress of India, Lord Alcester, Alfred Salter, Queen of England, Lord Wolseley, Jeanne d'Arc, Golden Empress, Prince Alfred, Lady Hardinge, Mr. Bunn, Nil Desperandum, and Mrs. W. Shipman. Messrs. W. & G. Drover, Farcham, were second, staging large, full, but rather uneven Japanese, the incurved generally full and well staged. Lady Carey was very large, Mrs. W. Shipman very fine, Nil Desperandum clean and solid. Edwin Molyneux, Boule d'Or, Avalanche, and Mdlle. Laeroix were especially noteworthy. Mr. W. Allen, gardener to Sir G. Russell, Bart., M.P., Swallowfield Park, near Reading, was third; Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth House, Marlborough, was fourth, both showing well. For twenty-four blooms in not less than twelve varieties, eight competed, Mr. Molyneux being again easily first, staging half incurved and the remainder Japanese. The former were Empress of India (2), Golden Empress (2), Alfred Salter (2), Queen of England (2), Lord Alcester (2), Prince Alfred, and Jeanne d'Arc. Japanese: Edwin Molyneux (2), Avalanche (2), Golden Dragon (2), Madame C. Audiguier (2), Val d'Andorre (2), Florence Percy, and Frédérick Marrouch. Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, was second, Prince Alfred, Lord Wolseley, and Jeanne d'Arc being particularly fresh and well finished among the incurved, Avalanche and Edwin Molyneux being the best among the Japanese; Mr. W. Allen was third. For twelve incurved, distinct varieties, six staged, Mr. G. Inglefield leading the way with Jeanne d'Arc, Empress of India, Queen of England, Golden Empress, Princess Teck, Novelty, Lord Alcester, Beethoven, White Beverley, Refulgence, Venus, and Mr. Bunn. Mr. C. Warden, gardener to Sir F. Bathurst, Clarendon Park, Salisbury, was second; Mr. J. Snow, Wadhurst Park, Sussex, third. For twelve Japanese, distinct, eleven staged, making a good display. Mr. Inglefield led the way with even fresh well staged blooms of Criterion, Madame C. Audiguier, Soleil Levant, Baronne de Prailly, Balmoreau, Thunberg, Edwin Molyneux, Fair Maid of Guernsey. Maiden's Blush, M. Freeman, Elaine, and Belle Paule. Mr. C. Brooks, gardener to H. A. Simmonds, Esq., Red Rice, Andover. was second, staging even clean blooms; Mr. Snow third. For twelve Anemone flowered nine competed, Messrs. Drover being easily first with blooms well up in the centre of Laing's Anemone (2), Minnie Chate, Lady Margaret, Nouvelle Alvéole (2), Gluck (2) Jean Marty, Margouline (2), and Sœur Dorothée Souille. Mr. Neville was a good second; Mr. Snow third. For the same number of reflexed varieties Mr. W. Allen had the first of four lots, staging Amy Furze, King of Crimsons (2), Madame Madeline Tezier, Dr. Sharp, Phidias, Chevalier Domage, Alma, Cloth of Gold, Cullingfordi, Emperor of China, and Distinction. Mr. C. Brooks was second; Mr. T. Osborne third. Mr. C. Brooks had the premier award in the maiden class for twelve blooms, staging well. For twelve blooms, not more than two of any variety, seven competed, Mr. E. Wills being first card with a good stand; Mr. T. Annells, gardener to C. Shenton, Esq., The Glen, Winchester, second; Mr. H. Drover, Ventnor, Isle of Wight, third.

Amateurs staged good blooms in their respective classes, Mr. R. Carter, St. Denys, Southampton, being the most conspicuous. For the most elegant glass stand or epergne dressed with Chrysanthemums and other flowers, ladies only, Miss Flight was first with a light arrangement of flowers, foliage, and grasses evenly disposed; Miss Chamberlain, Southampton, was second, Mrs. H. Brodie third.

Mr. W. Colchester offered a special prize for a specimen Chrysanthemum, to be grown with Ichthemic guano. Mr. W. Joy staged a magnificent one of Lady Selborne, 5 feet in diameter, covered with blooms of good quality. Messrs. W. Wood & Sons offered a silver medal for six cut-back Chrysanthemums, to be fed with their liquid manure powder. Mr. Busby obtained the award. Mr. Wills arranged the best miscellaneous group of plants, a light one; Mr. J. Amys, gardener to Hon. Mrs. Elliott Yorke, Netley Cliff, second. Mr. Osborne had the best collection of Orchids. Table plants, Palms, Cyclamens, were all well represented.

First-class certificates were awarded to Mr. Molyneux for the following Japanese Chrysanthemums:—

Avalanche.—Pure white, full rounded flowers, remarkable for the solidity of the florets, which are narrow, some being split at the edges; the bloom measured 7 inches across and 5 inches deep.

Mrs. Falconer Jameson.—Florets broad, strap shaped, the under side pale gold, the upper surface orange bronze; bloom 7½ inches in diameter and 5 inches deep. The plant grows only 3 feet high.

Florence Percy.—Florets waxy white, exquisitely cut at the edges. A full bold flower 5 inches deep, the bottom florets drooping in a most graceful manner, described by the ladies as "quite a gem."

Frédérick Marrouch.—A large full flower, having long fluted florets rich deep yellow. A grand acquisition to the back row varieties, superseding Soliel Levant, 8 inches in diameter.

Jean Marty (Drover).—A Japanese Anemone, deep lilac centre, which is very high, large, and full; the guard florets paler; distinct, and effective.

Fruit.—The display was imposing, especially the Grapes, which were throughout of excellent quality. For three distinct varieties, one bunch of each, Mr. C. Warden staged a grand lot among nine entries. Muscat of Alexandria was perfect in every way; Gros Colman, large in bunch, berry, and well coloured, and Gros Guillaume. Mr. T. Hall, gardener to S. Montagu, Esq., M.P., South Stoneham House, was second, and Mr. W. Allen third, both staging well. For three bunches of black Grapes Mr. Molyneux led the way with Alicante, extra large berries and shapely bunches. Mr. Hall followed with large loose bunches but smaller berries, finely finished: third, Mr. J. Chalk, gardener to G. Read, Esq., Westwood, Salisbury. Eight competed. For the same number of white bunches Mr. Molyneux was easily first with good Muscat of Alexandria; Mr. J. Smith, gardener to Lord Montagu, Palace House, Beaulieu, second. Mr. H. W. Ward, gardener to Earl Radnor, Longford Castle, Salisbury, had the heaviest bunch, Gros Guillaume, about 7 lbs.

Mr. Snow following. For two bunches of black Grapes, Mr. R. Balchin, gardener to H. Sholto Douglas, Esq., Noorlands, Bitterne, was first with Alicante, very fine shapely bunches, grandly coloured. Mr. C. Warden second. For two bunches of white, Mr. J. Budd, gardener to F. Dalgetey, Esq., Lockesley Hall, Romsey, was first, Mr. Warden following. Mr. G. H. Richards, gardener to the Earl of Normanton, Somerley, Ringwood, staged the best Pine Apple, a good one of Smooth Cayenne. Mr. G. Lock, Crediton, Devon, followed. For three dishes of dessert Apples, distinct kinds, among six entries, Mr. G. Pragnell, gardener to J. D. W. Digby, Esq., Sherborne, Dorset, was first with Worcester Pearmain, King of Pippins, and Cox's Orange, well coloured; Mr. R. West, gardener to J. R. Wiggram, Esq., Northlands, Salisbury, was a close second. Mr. Hall had the best four dishes of Apples, distinct, either kitchen or dessert, with large handsome fruit. Mr. Pragnell staged best four dishes of Pears, distinct, followed by Mr. C. Curtis, gardener to J. S. Dixon, Esq., Brintons Road, Southampton.

VEGETABLES were a strong feature of the Show. For eight distinct varieties Mr. Pragnell was first with a fine collection. Mr. W. Pope, gardener to the Earl of Carnarvon, Highelere Castle, Newbury, a close second. For six distinct varieties ten lots were staged. Mr. Inglefield led the way with good produce, with the remarkable incident of not having any Potatoes; Mr. Molyneux followed. Several exhibits, not for competition, were staged. A collection of Chrysanthemums cut and arranged like Dahlias, single, with Ferns and Palms from Messrs. Keynes, Williams & Co., Salisbury, was much admired. A collection of plants from Messrs. Cutbush & Son, Barnet Nurseries; fifteen dishes of Pears from Mr. W. Wildsmith, all of good quality; five Pine Apples from Mr. Ward, all tended to the attraction of the Exhibition.

THE SURREY CHRYSANTHEMUM SOCIETY.—NOV. 5TH AND 6TH.

THE fifth annual Exhibition of this Society was held in the Peckham Town Hall, Rye Lane, on Monday and Tuesday last, when there was a fair number of exhibits, but the cut blooms were not of first rate quality. Some of the classes were for fifty varieties of any section apparently, and the kinds had a rather mixed appearance. There were a few good stands of incurved, but the Japanese were the best represented. Some of the leading exhibitors were Mr. F. Sadler, gardener to Mrs. Lambert, Oakhill Place, Streatham; Mr. J. Head, Peckham, from G. R. Parker, 13, Heron Road, Herne Hill; and Mr. D. Agate, gardener to Mrs. Walton, Woodlands, Peckham Rye. One of the best stands in the Show was the premier twelve Japanese from Mr. T. Sadler, the varieties being—Back row: M. Tarin, Elaine, Japonaise, Belle Paule. Middle row: Mdlle. Lacroix, Curiosity, Peter the Great, Val d'Andorre. Front row: Soliel Levant, M. J. Laing, Mad. J. Laing, and Mr. W. Holmes. All were high, of good size and colour. The best group of Chrysanthemums was shown by Mr. W. Dickens, The Palatines, Champion Hill, being first in the class with well arranged plants bearing good blooms, both Japanese and incurved. A few non-competing exhibits were entered, including a stand of blooms from Messrs. Davis and Jones of Camberwell. This Show is essentially a metropolitan one, and the district is not one of the most favourable for plant cultivation, but there is still room for improvement in the quality of the exhibits, judging by what has been accomplished by amateurs in the Lambeth Society.

KINGSTON-ON-THAMES.—NOVEMBER 6TH AND 7TH.

ONE of the most satisfactory all-round Shows yet held by this successful Society was that opened on Tuesday last, and continued on Wednesday. The competition was keen, the exhibits of good quality for such an adverse season, the blooms much fresher than could have been anticipated, and all the classes well filled. The Hon. Secretary, Mr. G. Woodgate, has taken up the work of the Society in the right spirit, and he deserves much credit for the admirable results of his first year's service.

CUT BLOOMS.—The chief centre of interest was the class for forty-eight varieties, twenty-four incurved and twenty-four Japanese, in which the fifth 25-guinea challenge vase was offered for the first time this season. The honour fell to W. Furze, Esq., The Roselands, Teddington (gardener, Mr. E. Coombs), and the victory will be a popular one in the district, for Mr. Furze is widely known as an enthusiastic amateur who takes the deepest interest in Chrysanthemums specially and horticulture generally. The varieties shown by Mr. Coombs were as follows:—

Incurved.—Back row: Golden Emperor, Alfred Salter, Lord Wolseley, Lord Alcester, very handsome; Nil Desperandum, Queen of England, very deep; Prince Alfred, Empress of India. Middle row: Beauty, John Salter, capital; Prince of Wales, Mr. Bunn, Emily Dale, Jardin des Plantes, Mrs. Heale, Empress Eugénie. Front row: Sir Stafford Carey, Lady Hardinge, Mrs. Shipman, Princess Teck, Golden Eagle, Princess Beatrice, Mr. Brunlees, Refulgence.

Japanese.—Back row: Boule d'Or, Madame C. Audiguier, Madame J. Pigny, M. Delaux, Soleil Levant, Duchess of Albany, Fair Maid of Guernsey, Edwin Molyneux. Middle row: Florence Percy, an excellent deep bloom; Criterion, M. Tarin, Avalanche, Val d'Andorre, very large and handsome; Madame J. Laing, Jeanne Délaux, and Madame B. Rendatler. Front row: M. J. Laing, Mdlle. Lacroix, Mr. Garner, M. Baco, Mdlle. Moulise, Madame Paul Dutour, C. Orchard, and M. Freeman, very fine. Both incurved and Japanese were highly creditable to the exhibitor, who well deserved the prize, though it has to be won again. Mr. J. Quarterman, gardener to C. E. Smith, Esq., Silvermere, Cobham, was second with rather flat, small, but fresh incurved blooms. The Japanese were, however, of capital quality, Val d'Andorre, Criterion, J. Délaux, L'Adorable, and Soleil Levant being admirably represented. Mr. R. Cawte, gardener to J. P. Robinson, Esq., Brookleigh, Esher, was third with a clean collection, the incurved irregular, but the Japanese were of good substance, a fine corner bloom of Edwin Molyneux being notable. The fourth collection was disqualified as not distinct, Princess Imperial and Lord Alcester being shown in the incurved.

The class for twenty-four incurved varieties was well filled, and the quality of the blooms was satisfactory. Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, won first honours with a clean collection, the back row fine examples of the Queen type, the others a little more irregular but mostly neat blooms. The varieties were:—Back row: Queen of England, Emily Dale, Alfred Salter, Empress of India, Golden Empress of India, Lord Wolseley, Lord Alcester, and Princess of Wales. Middle row: Prince Alfred, Mrs. W. Shipman, Sir Stafford Carey, Novelty, Nil Desperandum, White Venus, Lady Hardinge, and Jardin des Plantes. Front row: Mrs. Dixon, Venus, Mrs. Rundle, Refulgence, Mabel Ward, Golden Eagle, Mr. G. Glenny, and Princess Beatrice. Mr. E. Coombs was second with a bright, even, well arranged stand, a little wanting in substance. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Rochampton, was third, and Mr. W. Allen, gardener to Sir G. Russell, Bart., M.P., Swallowfield Park, Reading, was fourth amongst six competitors.

For twelve incurved varieties Mr. C. Slade, gardener to Lady Bowater, Richmond Park, was first, showing clean, even, medium size blooms of the following:—Back row: Empress of India, Queen of England, Golden Empress of India, Golden Queen. Middle row: Princess of Wales, Lord Alcester, Alfred Salter, Lord Wolseley. Front row: Jardin des Plantes, Prince Alfred, Mr. Bunn, and Jeanne d'Arc. Messrs. W. Reed, R. Cawte, and J. Snow were the other prizetakers amongst ten exhibitors. Mr. J. Reeves, Templemore, Oatlands Road, won the first prize for six incurved, showing Lord Alcester, Alfred Salter, Queen of England, Empress of India, Prince Alfred, and Jeanne d'Arc. Messrs. Skeet and Quarterman followed.

There were fourteen entries in the class for six incurved blooms, one variety; Mr. J. Daniel, Inglewood, Kew, leading with Empress of India, large and pure white. Mr. Coombs was second with similarly good Golden Empress of India; Mr. C. Beckett, gardener to T. H. Bryant, Esq., Juniper Hill, Dorking, following with Lord Wolseley, very fine deep blooms. In the class for six incurved blooms from amateurs who had not taken a prize in competition Mr. J. Reeves, Mr. Bradford, gardener to H. B. Wallis, Esq., St. Mary's Road, Wimbledon; and Mr. A. Felgate, Walton, were the prizetakers.

Japanese were well represented in the class for twenty-four blooms, distinct varieties, and there again Mr. C. Gibson won first honours. The varieties were as follows:—Back row: Edwin Molyneux, Madame C. Audiguier, Carew Underwood, Elaine, Criterion, Marguerite Marroueb, Fair Maid of Guernsey, and Hamlet. Middle row: Mrs. J. Wright, Yellow Dragon, La Triomphante, Mr. H. Wellams, Val d'Andorre, Peter the Great, M. Tarin, Sarah Owen. Front row: Mad. J. Laing, Mdlle. Lacroix, Fernand Feral, Maiden's Blush, Avalanche, Mawet Postula, and M. J. M. Pigny. Mr. J. Munro, gardener to E. J. Paul, Esq., Cambridge House, Twickenham, was a very close second with a much more diversified and brighter stand, including grand blooms of Boule d'Or, J. Délaux, and Comtesse de Beauregarde. Mr. C. Beckett was third, and Mr. Sullivan fourth. There were eight competitors.

Mr. J. Snow was placed first for twelve Japanese varieties, showing Soleil Levant, Edwin Molyneux, Mrs. Cannell, Boule d'Or, Comtesse de Beauregarde, Lady T. Lawrenee, Duchess of Albany, Mdlle. Lacroix, Ralph Broeklebank, Mad. C. Andiguier, Mrs. J. Wright, and J. Délaux. Mr. J. Wilkin, gardener to J. Pearson, Esq., The Grange, Kingston Hill, was second, Mr. R. Cawte third, and Mr. H. C. Hoskings, gardener to Sir H. Thomson, Hurstside, West Moulsey, was fourth. Six exhibitors entered in this class. Messrs. J. Quarterman, W. Keet, and A. Felgate won the prizes for six Japanese in the order named.

For six Japanese, one variety, Mr. J. Snow, South Park Gardens, Wadhurst, Kent, was first with Edwin Molyneux. Mr. C. Beckett was second with Madame. C. Audiguier; and Mr. E. Coombs third for Duchess of Albany, all fine representative blooms of their respective varieties. Sixteen stands were shown in this class. The class for six Japanese blooms from exhibitors who had not previously won a prize in open competition brought ten exhibits, Messrs. Bradford, Reeves, and Felgate winning the prizes in the order named.

Anemone varieties formed an interesting display. Mr. Sullivan was first with twelve blooms, showing Aequisition, Crispum, Nouvelle Alvéole, Emperor, Lady Margaret, Gluck, Louis Bonamy, George Sands, and Le Marguerite. Mr. E. Coombs was second, and Mr. J. Snow third. For twelve Japanese Anemones Mr. Sullivan was first, showing capital blooms of Jean Marty, Madame Cobral, Marguerite Solleville, Bacchus, Margouline, and Sœur Dorothée Souille. Mr. G. Woodgate, gardener to Lady Wolverton, Warren House, Kingston, was a good second, and Mr. W. Reed third.

Mr. R. Cawte was awarded the first prize for twelve reflexed blooms, showing King of Crimsons, Amy Furze, Chevalier Domage, Cullingfordi, Dr. Sharpe, Mrs. Forsythe, and Phidias. Mr. C. Gibson was second, and Mr. E. Coombs was third. In several smaller and local classes the exhibits were also very satisfactory.

Mr. W. Allen was awarded the prize for the premier incurved bloom, Lord Alcester, a grand solid bloom 5 inches in diameter and 4½ inches deep. Mr. J. Munro gained a similar honour amongst the Japanese for a magnificent example of Boule d'Or 8 inches in diameter.

Certificates were awarded for the following new varieties.

Avalanche (Mr. E. Molyneux).—A beautiful white Japanese variety, referred to in our report of the Southampton Shew.

Chrysanthemum Sunflower (Mr. E. Molyneux).—A golden Japanese, previously certificated by the Royal Horticultural Society and the National Chrysanthemum Society, from Mr. Holmes.

Chrysanthemum Alfred Lyne (Mr. J. Lyne, Belvedere Gardens, Wimbledon).—A sport from Novelty, somewhat in the way of Lady Hardinge. It originated in 1887, and has been carefully tested. The colour is distinct, a kind of pale purplish mauve with a silvery tip, and though most nearly approaching Lady Hardinge it was found, after careful comparison, to be distinct enough to merit recognition.

Specimen Plants and Groups.—The groups of Chrysanthemums were not quite so good as usual. In the first-prize group the blooms were decidedly heavy, but the foliage was thin. On the other hand, the specimen plants were in unexpectedly good condition. The blooms in the winning exhibits were not large, but the plants were well flowered.

The first class in this section was that for a group of miscellaneous plants arranged for effect on a space not exceeding 100 square feet. Three were in competition, and the premier award went to Mr. J. Bush, gardener to A. W. Aston, Esq., West Hill Lodge, Epsom. White Chrysanthemums were prominent amongst the flowering plants, Bouvardias lending colour, and blue, white, and red Primulas amongst Ferns in front formed an effective margin. Mr. T. A. Glover, gardener to E. Ellis, Esq., Manor House, Wallington, was second, Oncidiums being employed in his group with good effect. Mr. Pitcher, gardener to Mrs. Dunnage, Alhury House, Surbiton, was third.

Collections of Chrysanthemum plants to occupy a space not exceeding 50 square feet were shown by five growers, the first going to Mr. Springthorpe, gardener to R. H. Alexander, Esq., Gifford House, Rochampton. Reference has already been made to this group. Mr. Pitcher's plants, which secured the second prize, were somewhat light in point of bloom. Mr. Stemp, Randalls Park Gardens, Leatherhead, showed a compact group, his dwarf front row plants being admirable little specimens, but the blooms throughout were small. Mr. Hunt, gardener to C. Boyles, Esq., Broghill, Wimbledon, was fourth.

Six trained specimens, incurved, with single stems, incurved. Two entries. Mr. Cawte was a very creditable first, good specimens of Prince of Wales, Mrs. Dixon, Mrs. G. Rundle, Mr. G. Glenny, Baron Beust, and Empress Eugénie gaining him a ready victory. His solitary opponent, Mr. Reid, showed Prince of Wales, Mrs. Cobray, and Mrs. Dixon in fairly good condition. There was only one exhibitor in Class 4, that for four reflexed varieties—namely, Mr. Reed, and the first prize was awarded to him. Peter the Great and Pink Christine were his best plants. There were three competitors with three standards, distinct varieties, Mr. Cawte winning with Madame B. Rendatler, Mrs. G. Rundle, and Prince Alfred. Mr. Skeet was second, and Mr. Elliott, gardener to Mrs. Harrison, Leydon House, Mortlake, third. The latter had the largest plants, but they were lightly bloomed. Trained Japanese were shown by Messrs. Fullick, Woodlands, Collins Road, Merton; and W. Reed only, the former winning.

Pompons were admirably shown, Mr. Cawte being unopposed with six plants, and he was awarded the first prize. the varieties best shown being Marie Stuart, Rosinante, hotb admirable specimens, and Mr. Astie, Marguerite de Coi was not out. Mr. Reed also had an easy victory with three plants, showing well, and the prizes for single plants went to Messrs. Elliott, Cawte, and Reed.

In minor classes for plants the principal prizewinners were Messrs. R. Press, J. Pay, W. Holt, J. Lemon, and J. Bowden.

Plants for Table.—There were eleven exhibitors of nine plants for table decoration, and these, arranged in the centres of the tables, gave a pleasant relief to the blooms. Mr. Sullivan was first with Dracæna superba; Crotons Countess, Prince of Wales, Lanei, and superbum; Aralia elegantissima, and Cocos Weddelliana. Mr. Carter, gardener to Alderman Evans, Ewell Grove, second; and Mr. Waite, gardener to Col. Hon. W. P. Talbot, Esber, third. Mr. Burton, gardener to Capt. Fenwicks, Wimbledon, won with six plants, Mr. Cawte following. Six berried plants in pots brought two competitors, Mr. W. Reed showing very effective plants of red and yellow Capsicums for first prize, Mr. Elliott following with Solanum Capsicastrum. Messrs. Carter, Glover, and Pitcher were successful with Primulas.

Stands of Flowers, Bouquets, &c.—Special prizes were given for these, those offered by Mrs. Shrubsole going to the following:—Mrs. Drewett, Russell Villa, Richmond Road, Kingston, was first for a remarkably beautiful stand, in which scarlet Bouvardias, Lapageria alba, and Eucharis grandiflora played a prominent part. It was most lightly and tastefully arranged. Miss K. Prior, Hesse House, Kingston, was second, her stand being a little too packed, and Miss Scrivener, Boston Lines, third; a promising stand, this being her first attempt. Mrs. Mackennon's prizes for stands of hardy shrubs, Ferns, and Grasses grown out of doors went to Mrs. Gardener, Strawberry Hill, and Mrs. Benson, Elm Road, Kingston.

Buttonhole bouquets were charming, the prizewinners being Messrs. Loft, first; Perkins & Sons, Coventry, second; Brown, Richmond, third; Miss A. Drewitt, fourth; and Mrs. Drewett, fifth. Mr. Lofts' victory over two such formidable opponents as Messrs. Perkins and Brown was most creditable to him. Hand bouquets were most beautiful too. Messrs. Perkins & Sons were first with an example of their usual skilful arrangement, the second prize bouquet being shown by Mr. Brown of Richmond. Mr. Miller, florist, Surbiton, was third.

Fruit.—Grapes were well shown, sixteen competitors showing three bunches of black Grapes. Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Kingston, was first with well-coloured examples of Alicante; Mr. F. Batten, gardener to R. Venables, Esq., Hollywood, Wimbledon, was second with Gros Maroc; and Mr. J. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, Basingstoke, was third for Alicante. Eight stands of three bunches of white Grapes were entered. Mr. C. Griffin won first honours for excellent samples of Muscat of Alexandria; Mr. J. Bowerman was second with clean, well-coloured bunches of the same variety; Mr. H. Loft, gardener to J. F. Schwann, Esq., Oakfield, Wimbledon, being third for the same not so well coloured.

Mr. W. Bates, Poulett Lodge Gardens, Twickenham, was first for four dishes of Apples, fine samples of Warner's King, Peasgood's Nonesuch, Cox's Orange Pippin, and Dumelow's Seedling. The best Pears were shown by Messrs. T. A. Glover, W. Reed, and H. W. Pitcher.

NATIONAL CHRYSANTHEMUM SOCIETY.—November 7th and 8th.

As had been expected, the annual Exhibition of this Society in the Royal Aquarium, Westminster, proved a most successful gathering of exhibitors and exhibits, and we regret that we are unable to give a full report owing to the brief time at our disposal before going to press. A carefully prepared and liberal schedule had been published, the substantial prizes offered in the more important classes attracting numerous competitors, and the several features of special interest provided this year induced a large number of visitors to attend. All the arrangements were admirably carried out under the superintendence of the Hon. Secretary, Mr. William Holmes, and the Society may be congratulated in having scored another decided success.

Cut Blooms.—The leading class in this section was the novel one provided for horticultural and Chrysanthemum societies, in which a collection of forty-eight blooms, twenty-four incurved, not less than eighteen varieties, and twenty-four Japanese, distinct. The prize offered consisting of a challenge trophy and £10, the cash to be handed to the treasurer of the society winning the award, to be equally apportioned to the growers of the blooms staged, and the challenge trophy to the president, to be retained by him for twelve months, and returned to the Secretary of the National Chrysanthemum Society not less than fourteen days before the November show of 1889. The title of the winning society to be engraved each year on the tropby. There were five entries in this class, and the Weald of Kent Gardeners' Mutual Improvement Society, represented by Mr. J. Doughty, The Gardens, Angley Park, Cranbrook, was successful in winning the honour for the first time. Both the Japanese and incurved were good and wonderfully fresh. The Southgate, Wimbledon, Bristol, and Higbgate Societies also showed well, and but for the incurved having suffered in transit the Wimbledon Society would have stood a good chance of success.

Cut blooms generally were of good quality, and some were exceptionally so, the Japanese perhaps being the finest throughout the Show. All sections were, however, well represented, including the Japanese, reflexed, Anemones, and Pompons. The best forty-eight incurved blooms were shown by Mr. J. Doughty, who was awarded the first prize for really grand blooms, the breadth of the florets being remarkable. The double success of winning the Society's challenge trophy and taking first with forty-eight such fine blooms as these deservedly placed Mr. Doughty as the champion of the Show. Mr. J. Horsefield, Heytesbury, was second, also showing fine blooms.

For forty-eight Japanese, Mr. J. McKenzie, gardener to T. S. W. Cornwallis, Esq., Linton Park, Maidstone, won the premier prize with excellent blooms.

Specimen plants are not quite so well represented generally, but the groups are effective, especially those in a space equal to 100 square feet. In that class Messrs. N. Davis and Jones, Camberwell, succeeded in winning the gold medal for a bright arrangement, including a due proportion of incurved and Japanese.

Six stands of Chrysanthemum flowers and foliage were staged, Mr. J. Chard, Stoke Newington, winning first honours for a most tasteful arrangement; Mr. W. Brown of Richmond taking the second place, also with a very effective stand. Some divergence of opinion existed respecting the exhibits in this class, but they were judged on their merits as regards tastefulness in arrangement.

Fruit and vegetables are shown extensively, the galleries and St. Stephen's Hall being filled with competing and non-competing exhibits, Apples, Pears, Potatoes, and collections of vegetables being well represented. Horticultural sundries, implements, and buildings also occupy much space.

At 2 P.M. on Wednesday the Show was formally opened by Sir Guyer Hunter, M.P., who said he was pleased to learn that this, the forty-third annual exhibition held by the Society, is both the largest and the best yet obtained. There are 504 exhibitors from all parts of the country, and the entries in the classes are very numerous. The President, Mr. E. Sanderson, made a few appropriate remarks, and Mr. W. Holmes, in proposing a vote of thanks to Sir Guyer Hunter for attending to open the Exhibition, observed that it was the first time in the history of the Society that this little ceremony had been performed, but he thought it was one they might continue with advantage. The vote of thanks was carried by acclamation. Judges and visitors shortly afterwards assembled at luncheon, where several speeches were made by the officials and friends of the Society.

THE NATIONAL AURICULA AND THE NATIONAL CARNATION AND PICOTEE SOCIETIES.

(Southern Sections.)

The annual general meetings of the above Societies were held on October 23rd, and not only were inaccurate reports of them sent to the gardening papers, but articles were written founded upon the erroneous paragraphs. As Honorary Secretary of both Societies, I beg to say that not a line was either written or prompted by me of those matters. The first of the inaccuracies I complain of is the statement that it had been decided to hold the annual displays at the Crystal Palace. Nothing of the kind was decided at the meetings. The Societies are also termed "National Societies," but to be correct the meetings were of the "Southern Sections" only. As some of the criticisms have been adverse it is only fair to the north to say that they are not included. I decidedly object to the publication of the proceedings of any societies such as have appeared in the papers, even if they had been accurate. It was decided at the meeting this year, as it was also last year, to communicate with the Directors of the Crystal Palace to ascertain on what terms they would receive the Societies; at the same time it was agreed that a similar application be made to the Council of the Royal Horticultural Society. I thought it best while negotiations were in progress to make no public statement; others evidently differed from me in this respect. When it had been finally decided where the Exhibitions were to be held I would have sent the usual report to the Press.—Jas. Douglas, *Barking Side, Ilford.*



FRUIT FORCING.

Peaches and Nectarines.—*Early-forced House.*—The final thinning of the shoots in the earliest house should have immediate attention. Wash the trees in the first instance with warm soapy water, and afterwards dress them with an insecticide. Thoroughly cleanse the glass with water, the woodwork and trellis with soap and water, and whitewash the walls. Tie in the trees loosely, allowing space for the growth to swell without binding, letting the young shoots be laid in so as to secure an even spread of foliage, and sufficiently wide apart to admit of next year's growth being trained without crowding as the fruit approaches maturity; and to effect this the shoots should be 9 to 12 inches apart, and not closer on the main branches than 18 inches. A shoot of 12 to 18 inches in length will give a heavy per-centage of fruit for thinning, provided the wood be well ripened, and a Peach worthy of the name to every foot of trellis covered by the trees is quite as much as trees under early forcing can support year after year. If the lights have been removed they may be kept off until the middle of the month if the weather be mild, or if put on ventilation should be freely given until the house is closed. If the roof lights are fixed the doors and ventilators may be constantly open, and see that the inside borders of such houses do not lack moisture, but give a thorough soaking of water if necessary, so as to moisten the soil down to the drainage.

Trees Intended to Ripen their Fruit in June.—Trees that are to be started at the beginning of January will now be leafless, and should be pruned without delay, while, if the wood on which the fruits were borne this season was cut out when the fruits were gathered, this will be light. Indeed beyond removing any weak growths and where they are too crowded the knife will not be needed, for however long the shoots, they will, if the trees are healthful, be ripened to their points, having stout short-jointed wood well set with flower buds. Trees extending may have the leading shoots cut back to originate others for furnishing the trees, being careful in all shortening the shoots of the current year to cut back to a wood bud, or if to a triple bud, making sure that the centre is a wood bud, as trees in some cases form triple fruit buds at a joint. The house and trees should be thoroughly cleansed and secured to the trellis. The roof lights having been removed some time ago need not be replaced until the middle of December, as the autumnal rains will thoroughly moisten the borders and keep the trees in a complete state of rest, which is a matter of importance, as trees that ripen their fruit and growths early are easily excited, and excitement in November by putting on the lights, should the weather prove mild followed by a check, is very often the cause of the flower buds falling when they should be expanding.

Houses Started in February.—These trees are now parting with their foliage, and should have all the air possible. Any lifting or root-pruning yet in arrears should be seen to and brought to a close as soon as possible. When the leaves are all down it will be an advantage to remove the roof lights and expose the trees for a month or six weeks, but if the roof lights are not moveable admit air freely in all but severe weather, and see that there is not any deficiency of moisture in the borders. If the trees are not lifted remove the surface soil down to the roots, and supply fresh stiff loam to which has been added some charred refuse and steamed bonemeal.

Late Houses.—Lifting and root-pruning trees in these structures should be taken in hand at once and completed without further delay. During the operation the house must be kept rather close, the trees syringed, and the roots as little exposed as possible. When the roots have taken to the fresh material ventilate freely. If the trees do not require lifting it will be well to keep the house rather close by day, especially from sun heat, and to throw it open at night, which will soon ripen the growths, especially if the wood be thin, so as to allow of light and air having free access to the wood. If the wood be at all crowded it should be well thinned. There must not be any deficiency of moisture at the roots or they will not develope the buds perfectly, falling when they should be expanding in spring.

Cucumbers.—Plants which have been in bearing the past three or four months will be considerably renovated by receiving a good surface-dressing of a mixture of three parts light turfy loam, and one part in equal proportions of peat and charcoal. The loose surface soil should be first removed, and the surface dressing applied warm. When the roots are working freely in the fresh material surface-dress or mulch with horse droppings, a sprinkling once or twice a week, the manurial properties of which will be worked down by each successive watering, imparting vigour to the plants, and giving the fruit a deep colour with a "blue" lustre. Examine the soil, and when water is necessary give a thorough soaking at the same temperature as the house. Ventilate freely during mild weather, which must not be done to lower the temperature, but to prevent it becoming too high, increasing it as the temperature rises, so as to prevent chilling draughts, which are highly injurious to the plants. Maintain a night temperature of 65°, but on cold nights 60° is sufficient, with 70° to 75° by day with fire heat, advancing 10° to 15° from sun heat. Close early in the afternoon, and the glass being clean a good heat will be secured, which must be accompanied by a fair amount of atmospheric moisture. Canker is unusually scarce this autumn, but if it appear rub quicklime well into the infected parts. Aphides should be combatted by moderate, frequent fumigation.

Winter Fruiters.—Add more soil to the hillocks or ridges of late plantings as soon as the roots show through the sides, and complete the earthing of the first autumn plants, and then place a mulching of short sweetened stable manure, which will act beneficially by keeping the roots in an equable condition as to moisture, encourage surface roots, but stimulate them by the manurial properties being washed down. Decomposing material is also of benefit to the foliage through the ammonia evolved. Keep the bottom heat steady at 80°. Use as little fire heat as possible. On fine mornings turn off the heat about eight o'clock, or by the time the solar heat is acting on the house, and keep up the required temperature without having to resort to much ventilation to keep it from rising too high, as would be the case when the fires are kept going until the maximum day temperature is reached. The heat should be turned on again when the sun is going off the house, so that by the time the heat husbanded by early closing has fallen to 75° the heat radiated by the pipes will be sufficient to maintain the temperature through the night at 65°, to effect which, in severe weather there should be plenty of pipes. Blinds of such material as frigi domo will prevent the necessity of so much fire heat, and are particularly useful during falls of cold rain or snow. They must be used so as to interfere with as little light as possible.

PLANT HOUSES.

Passifloras and Tacsonias.—Where these are trained under the roof of plant structures they must be subjected to a liberal thinning. This can be done now without the least injury to the plants, and with beneficial results to the occupants that have to be grown beneath them. It is essential that every ray of light and sunshine should be admitted to the plants beneath. Tacsonia Van Volxemi will still produce flowers; these should be allowed to hang naturally from the roof, and as shoots cease flowering cut them close back. The flowers are very useful where low floral decorations are required on the dinner table. Plenty of wood can be removed without the destruction of many flowering shoots, so as to admit light freely to the plants below.

Imantophyllums.—These plants will have completed their growth, and those not wanted to flower for some months should have a cool airy structure. They should also be watered with great care, giving considerably less than has been the case up to the present time. If overwatered during the resting period the tips of their dark green foliage are certain to turn yellow, and the beautiful appearance of the plants is destroyed. If kept on the dry side they will remain in perfectly good condition. Some of the earliest plants are showing their flowers, and will be much brighter in colour if they are developed in a little warmth. At this season of the year the flowers, if allowed to expand in a cool house, are practically colourless. Seedlings raised from good varieties will be better in a cool than in a heated house during the season of rest. This treatment results in increased strength and vigour another year.

Dielytra spectabilis.—Imported roots of this easily forced plant can now be obtained, and may be potted in good soil in 5 and 6-inch pots. Home-grown roots are as good as those that are imported from the Continent annually, provided they have been prepared for the purpose. When the stock is grown at home the finest crowns only should be selected, and the smallest replanted for the following year's supply.

Acacia Riceana.—Where this plant is grown up pillars or under the rafters of the roof do not attempt to tie the shoots up in a formal manner. By doing this its beauty is totally destroyed. The long slender shoots should be permitted to hang naturally from the plant, the plant has then a graceful appearance when in flower. If it obstructs

too much light from below, thin the shoots so as not to destroy the natural appearance of the plant.

Clematis indivisa.—Regulate and thin the shoots of this and its variety lobata. Do not remove more shoots than is absolutely necessary, for this plant is better liberally pruned back after flowering, if any reduction of the plant is required. This looks better than many climbers when trained under the roof of houses in a formal manner. Its flowers being light remove the stiff appearance it would otherwise possess. It is, however, most picturesque when numbers of shoots are allowed to hang from the main stem trained under the roof. Watch for aphides, which are very liable to attack this plant. Fumigating the house with tobacco smoke is the best means of eradicating them.

Bignonias.—When once these plants are thoroughly established and have abundance of root they make shoots of an enormous length in a season. Plants of this description will bear severe thinning. Unless they are liberally cut back they soon become crowded, and if they are not exposed to full sunshine they will fail to flower satisfactorily.

Lonicera sempervirens.—This plant usually begins to look shabby from the present time by the ripening of its old foliage. Although it will continue growing and flowering throughout the winter in most houses where the temperature is kept at 45° to 50°, it is best to prune it hard back now. By so doing the shoots break into growth again and flower freely early in the spring.

Habrothamnus elegans.—At this season remove the puny shoots that are too weak for flowering. This plant is best against a tall pillar where it can be pruned close back after flowering and then be allowed to grow naturally without either tying or stopping the shoots. The shoots can be thinned at the end of June or July if they are likely to overcrowd the plant. This plant is subject to attacks of green fly, and it must be destroyed the same as advised above. Few flowers are more useful than these for the methods of table decoration that are now so generally carried out.

Rhynospermum jasminoides.—This and Lapagerias need very little attention in thinning ; the main object is to regulate the shoots of the former ready for the time it will come into flower, and the latter after they have done flowering ready for growth the following season. Both are liable to the attacks of mealy bug. Clean them thoroughly and fumigate with tobacco, or syringe with a solution of tobacco water if any trace of thrips can be found upon them.

Plumbago rosea.—P. rosea and its variety coccinea may be brought into flower if the plants are wanted, and placed in a temperature of 60°. Watch for thrips, which soon attack and destroy the foliage. Linum trigynum may also be pushed forward. The earliest Poinsettias will develope better bracts in a temperature of 60° to 65° than in a lower temperature. They can be gradually hardened afterwards for cooler houses.

Justicia flavicoma.—A few of the earliest of these may be pushed forward in a temperature of 65° to bring them into flower. By this treatment the heads may be reduced in size, but they will be found very useful, and nothing is lost in the end. The plants will flower again if well cared for after they have flowered the first time. The plumes the second time will be of large size. It is a mistake to throw them away after they flower the first time, for the plants are always more effective the second season, and there is no difficulty in having them in flower over a period of six months.

THE BEE-KEEPER.

FEEDING BEES.

ITS USES AND ABUSES.

At page 391 I drew the attention of bee-keepers to one evil arising from rapid feeding in autumn, and the following remarks will more fully explain the subject.

Feeding at all times is a necessary evil, and ought only to be resorted to when it cannot be avoided. In addition to creating damp inside the hive, rapid feeding sometimes ends in the total destruction of the stock by robber bees. The bees being often fully gorged cannot defend themselves against robbers, and so fall an easy prey to them, the contents of the hive being quickly carried away. In previous articles I warned bee-keepers against another danger arising from late feeding—viz., setting breeding a-going, which at this season with queens that have done considerable egg-laying (although young), there is a likelihood of some of them being deposed, the bees raising royal cells through the inactivity of the queen. Already many cases of the kind have been brought under my notice, and many queenless hives or drone-laying queens may be expected next spring.

One hive I was asked to see had already thrown out one young queen, which the owner attributed to the wisdom of the bees throwing out the young one and retaining the old one. "Do not be so fast," I exclaimed, "will you allow me to examine ?" The request was granted. An inspection betrayed two royal cells vacated, and a young queen and the old one on the same comb. No jealousy seemed to exist between them, but I could easily see that no attention was being paid to the old one, while she was occasionally being nipped at by some of the bees. I immediately removed the young one ; yet, notwithstanding the old queen was still present, a partial commotion took place amongst the bees, showing plainly that the laying queen was doomed, and the greatest wisdom was displayed in removing the young one.

Even though queens may not be deposed at this season through late and untimely breeding, there is a risk in the queen so encouraged giving way in spring through autumn feeding. When bees require feeding in the autumn the proper time to do it is immediately the honey harvest is over and when there is still a considerable amount of brood in the hive, so that the queen will not have the chance of depositing many eggs ; then both she and the bees will be allowed to go on in their normal state and prepare for the winter. With their natural rest they will commence work at the proper time and continue it until the change in the season. The so-called stimulative feeding has as bad or greater evils than rapid feeding. It causes a dwindling away of bees during the time of its continuance, an increase of egg-laying by the queen, with an equal diminution of the eggs by the bees eating them on a sudden decrease of temperature, while robber bees are ever on the wing when or wherever it is going on.

In addition to feeding immediately after the honey season is closed (which should serve the bees till next honey season) bees can be fed when newly swarmed and when they have been deprived of surplus honey with an extended harvest in view. If bees are not fed after being deprived of surplus honey they are liable to eat out their eggs and brood, even although much honey is left in their hive. Very little feeding at this time will not only prevent it, but will encourage the bees to continue bringing forth young ones, which will place the hive in a state capable of gathering much honey from the expected late bloom, which may be the Heather. These are the only times feeding should be resorted to. In a well managed apiary feeding at other times is never thought of, neither is rapid feeding, such as giving from 14 to 20 lbs. at a time, advisable. From 2 to 4 lbs. daily, or rather nightly, at the proper time is a good and safe medium. Nuclei have to be nursed or supplied with frames of comb containing honey.

What is the best feeder ? is asked by several correspondents. My answer is, The frame feeder ; not the one used as a dummy, but having the top bar of the frame about three-eighths of an inch thicker than usual, and having a trough cut along its centre to within an inch or so of its end piece. The top edges of the bar are reduced until a beeway is formed, a space in the centre is bridged off, and a thin cover flush with the adjoining frames completes it ; a tin having a spout to suit, and fitted with a lead valve completes the feeder. This tin may be as large as the bee-keeper desires, or so small as to hold half a pound only.

The advantages of this feeder are—the syrup is placed near the tongues of the bees, which they take more readily than from any feeder that has the syrup placed at some distance, as is the case with most. Nuclei and weak hives can be fed with these feeders when they would die rather than take it from most other kinds, and this property is the one we determine what is the best feeder. A strong hive will take syrup from any sort of feeder, but weak hives will not. Moreover, although this feeder is suitable for a weak hive, never exposing much syrup at a time, it is also a rapid feeder where there are bees to take it.

The foregoing does not exhaust the subject. "A Renfrewshire Bee-keeper" many years ago in the *Cottage Gardener* described the mode and advantage of filling combs with syrup and placing these inside the hive. The Americans caught hold of it, and again those on this side the Atlantic have adopted the system as a new

thing. The same writer also described the mode of manipulating bees. The able way he did so, and the humane results, were very superior to anything we have either seen described in writing or practised at our leading shows, where the appearance of the ground after manipulation betrayed thousands of dead bees, though not one should have been seen had the proper care been taken and the proper lesson given. This is a second query by an Argyleshire bee-keeper, "A. M. M." The question is, "How best to manipulate bees?" There are in all manipulations two things to be observed —viz., neither to kill nor irritate bees. Be careful that no offensive smell irritate them. Approach the hive cautiously, about 3 o'clock P.M. is the best time to manipulate. Bees returning from the field do not sting, only those that are flying and left their hive on being disturbed; a slight puff of smoke at the entrance, or a little carbolic acid upon the alighting board, will tend to soothe the bees. Smoke causes the bees to fill themselves, and no full bee stings. When the bees are quieted by either of these means the doorway may be closed for about thirty seconds or so. The bees will, during this interval, be attempting to gorge themselves with honey. Now uncover the hive, by degrees smearing the tops of the bars with carbolic acid, always in such a way as the bees will not be injured by coming into contact with it. If properly done it keeps the bees effectually down. Whenever they make the retreat before the acid they are subdued, and the frames may be manipulated forthwith. If the hive is a straw one the precautions are all that is necessary, when after a short time it may be inverted for further procedure. Caution is necessary, however. Never leave a hive in the middle of any manipulation, or woe betide the party who approaches it after with the view of finishing it off. A little forethought and patience on the part of the beginner will soon make him master of the art of manipulating bees. Other queries will be answered in future issues.—A Lanarkshire Bee-keeper.

THE NEW GLASS SECTION.

In my letter describing the above, on page 413, I omitted saying how it was put together, and as the Editor, in his foot-note, says "the glass being made secure in position by fine wire" may lead many to suppose that all the pieces of glass forming the section are held together by wire, I think I cannot do better than describe it somewhat in detail.

The sides of the section are of one width all round; the top piece of glass is split, to grasp a piece of foundation between, but this plan of fixing it will not be used or recommended by me, and was only done this year as an experiment. There are no corner joints to it; nothing, in fact, but the four glass sides and the honeycomb within can possibly be seen.

The sides of the section sent are only protected, after being finished by the bees by two squares of glass cut the exact size of the outside measurements of the section, which are fastened on with "fine wire" tinned; this glazing the sides is what is usually done to protect the comb from dust or insects, &c.

The advantages to be gained by the sections being of one width all round are many, one being they can be crated for market in a skeleton crate formed of very little more than a bottom board placed edge to edge, with a piece of glass at the outer sides, when it will at once form a massive lump of tempting honeycomb, insect-proof and practically dust-proof. When thus crated the faces of the comb in each section will be a bee space apart, but as a vivid illustration of how bees economise every little bit of space, and of how much they prefer glass, they have carried up their comb to the edge of the glass sides, storing honey in the cells next to it; thus the honeycomb looks ¼ of an inch thicker than it really is. This extra thickness is marked up with a "slope," and cannot be seen except by closely inspecting the section. This important advantage, which makes the section look bigger than it really is, makes a crate look a solid mass of honeycomb and adds strength and security in travelling, was not anticipated by me, and is wholly because bees prefer glass to wood within which to store their honey.

The section after being "glassed," was wrapped up in paper and enclosed in a small box surrounded with cork dust and sent by post, and the fact that it reached the Editor's hands safely should be conclusive proof that it is not really a "fancy" article, but one that is full of the elements of utility.

When they are "on the market," I think there will be few shopkeepers who will not take a pride in having half a dozen or so always on their counter or in the window, just protected at the sides with two pieces of glass.—A Hallamshire Bee-keeper.

[The section referred to was handed to Mr. Neighbour, the eminent apiarian, and can, we assume, be seen at his establishment, 149, Regent Street, London.]

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Tomatoes at Chiswick (*A Scotchman*).—The Tomato house illustrated on page 361 is 100 feet long and 30 feet wide. The prices (wholesale) realised up to that time, were 7d. and 8d. per lb. for the best, 5d. and 6d. for the seconds. The price obtained now is 9d. per lb. The distance between the plants is 2 feet 4 inches, and they have not been topped nor laterals permitted to grow, but the fruit is borne on the main stems. Thanks for your note, which will be remembered.

Zephyranthes (*J. E., Aberystwith*).—The bulbs at this time of year require resting, keeping the soil dry if they are in pots, or if out of doors they might be lifted and placed in sand if the soil and situation are at all damp. Both Z. Atamasco and Z. carinata, which you mention, are hardy in the south of England and in other moderately warm districts, but they have such a beautiful appearance in pots that they are well worth growing in this way for the greenhouse or any cool structure. They prefer a somewhat sandy well drained soil, but require plenty of water when growing and flowering.

Ichneumon Fly (*B. J.*).—The specimen sent is a four-winged fly of the ichneumon tribe, the particular species being Ichneumon crassorius. They are insects of parasitic habit while in the larval or preparatory state; the eggs are laid by the parents upon the bodies of other insects, or in some instances deposited in their nests, and the young larvæ burrow into and feed upon these, of course to their destruction. Many of the ichneumon flies attack caterpillars, hence they are really serviceable to the gardener. In the perfect state they are frequently seen upon flowers, to which they are attracted by the honey. Should one of them be taken in the hand, provided it is a female, the fly generally uses the ovipositor or egg-layer as a kind of weapon, and drives the sharp end into the skin; this act, however, is not accompanied by the emission of a poisonous liquid as is the case with the gnat and certain other species.

African Groundsel (*T. R.*).—This name has been given to a somewhat remarkable climbing or trailing plant—Senecio macroglossa, which is figured on page 67, vol. viii., January 24th, 1884. It is described there as having leaves like Ivy and flowers resembling those of the Etoile d'Or variety of Chrysanthemum frutescens. Senecio macroglossus has been found on the Table Mountain, at the Cape of Good Hope, and in other districts of South Africa, seeds having been first sent to Kew by Mr. Sanderson in 1868, and from these probably the first plants grown in this country were raised. Sir Joseph Hooker states that he has heard that in some continental or other cities this plant is grown in rooms and trained round the walls near the ceiling, and from its peculiar succulent structure it would, no doubt, be fitted for such dry positions, though its strength would be severely tested in ordinary English rooms. The best position for it is a greenhouse or cool stove, but the former is preferable, as it cannot endure a moist atmosphere. It is not particular as to compost, light sandy loam with a little leaf soil or old decayed manure being suitable, and if grown in a pot this must be thoroughly drained and water very carefully supplied. The best plan is, however, that adopted at Kew, where it is planted out and trained up the roof of the house.

Grapes not Keeping (*A. B.*).—No doubt the cold sunless summer has had "something to do with" the tendency of the Grapes to decay sooner than usual this year. In the first place many were later in ripening than usual, and where, as in your case, the wood is still immature the fruit cannot be completely ripe. The rain falling in your district "every day for a week" has also been against good keeping, and extra care is essential under the circumstances to maintain a dry buoyant atmosphere. The "same treatment as formerly" is not always the best treatment when the essential conditions differ. You would have acted wisely in having employed more fire heat some time ago than you appear to have done, and we gather from your letter you only "keep a little fire heat on in the daytime" even now. If that is so the Grapes, considering the state of the Vines, are almost certain to decay prematurely, for the berries must have been so cold on many nights as to cause a deposition of moisture on them by condensation, almost inevitably to be

followed by mould. The pipes should never be cold, but a temperature of 45° at night, or even more, maintained with a dry atmosphere, ventilating judiciously on favourable occasions. The greater the disparity between the night and day temperatures and the more sudden the fall of temperature and the longer it remains at a low figure, the greater the liability of your Grapes to decay.

The Purple-leaved Birch (*W. N., Yorks.*).—It was raised in America, and its discovery was described by M. Ed. André in *L'Illustration Horticole*. "On the 5th of June, 1872," writes M. André, "whilst going through the horticultural exhibition at Orleans as one of the party of judges, the attention of myself and of my companions was drawn to a number of shrubs consisting of forty plants all of one species, which were almost hidden in the recess of a somewhat darksome corner. It required but a moment's contemplation to enable us to grasp the full importance of the remarkable plant, which was, without doubt, the chief object of interest in the exhibition. It was a very beautiful variety of the common white Birch (Betula alba), but the leaves were completely purple or purple-black, like those specimens of the Beech so often seen in our parks. Here was indeed a real discovery, and a golden medal was with one accord awarded to it. It was obtained by chance by an old hand of the firm of Transon Brothers, named Dubois, from a sowing of the ordinary Birch. He very soon observed the unaccustomed appearance of the plant, and after having raised it he took grafts therefrom, and placed them on young stocks of the common variety, and afterwards established them in pots. It will be a great acquisition for our parks, and may be most advantageously associated with the Purple Beeches, the habit of which is quite different. It succeeds in the poorest soils, at the same time preserving all the strength and rural beauty of the original type."

Culture of Epidendrum bicornutum (*B. C.*).—The Epidendrum is rather difficult to cultivate, but the following notes by an experienced Orchid grower who has been very successful with it will explain the treatment required :—"The best way to grow it is in baskets suspended from the roof, or on pieces of Tree Fern stem. I have grown and flowered it under both systems, and if grown in baskets a compost of very fibry peat, moss, and charcoal should be employed. The plant roots freely in its natural habitat, but is rather shy-rooting under cultivation. The plant is a native of the West Indian Islands, particularly Trinidad, consequently it requires the temperature of the East Indian house. Having a friend living in Trinidad, I wrote him for particulars with regard to where it was found and under what conditions, and I will give his reply as I received it. He writes, 'With regard to your questions respecting E. bicornutum, if I tell you how I collected it no doubt that will suffice. I went out one day last week, hired a boat to carry me to the Five Islands, a group of irregular size, standing at no great height out of the water, in one bend or basin of our harbour, which may be called rocks left after the severance of that part from the mainland by the encroaching influence of the sea. Round these islands one can sail and soon load his boat by pulling the tufts off the ledges of the rocks or any cavity. It is subject to drenchings of water by the action of the waves, is generally fully exposed to the sun, and as it is surrounded by water the plant must be subject to heavy dews owing to the great variation in temperature of the land at night. I soon collected a load, though I am afraid they are too much advanced in growth for travelling.' By these remarks it is easily perceived that the three most essential requirements of E. bicornutum are heat, exposure to sun, moisture, and a moderate low night temperature, and if these be carefully attended to it should make satisfactory progress. Any trouble bestowed on it will, I am convinced, well repay the cultivator."

The Rationale of Planting and Potting Bulbs (*M. R. S.*).—You ask for "information on the rationale of bulb-planting in the open border and in pots," and observe that "neither Lindley's 'Theory and Practice of Horticulture' nor Thompson's 'Gardener's Assistant' throw much light on the matter, especially as to the depth at which bulbs should be planted to secure complete success." Something more than the mere depth that bulbs are covered is requisite for achieving complete success; still, we will endeavour to answer your question. The bulbs of the splendid Hyacinths that are awarded honours at the London shows are scarcely covered, but the apex of such is about level with the rim of the pot, and the surface of the soil is made level fully half an inch below it. The same remark applies to Narcissi, Tulips, Crocuses, Scillas, and small bulbs generally are just covered with soil when grown in pots, and the pots in turn covered about 5 inches deep with cocoat-nut fibre refuse. This applies to all bulbs. In planting bulbs in beds for one season only—that is, removing the bulbs after flowering—they are covered a little more than their own depth with soil. Crocuses, for instance, are covered a little more than an inch deep, and Hyacinths twice that depth, about an inch thick of fibre refuse or leaf mould being spread on the beds after the soil is levelled over the bulbs. In planting bulbs in borders to remain permanently they should be covered from twice to thrice their own depth or thickness—Crocuses and the like 2 to 3 inches, Hyacinths and the like 4 to 5 inches. If planted near the surface the earth is washed from them sooner or later. But it is bad practice to simply press a dibber into the ground to those depths and drop the bulbs into the holes thus made, as they are then either suspended or rest on a hard base, and in adhesive soil these holes are really miniature wells in which water collects. The base on which bulbs rest should be light and free—roots then penetrate it readily and superfluous water passes away. Bulbs should also be covered with soil through which the growth can extend freely, and the lighter it is the deeper they may be covered—for instance, they will push through 6 inches of leaf soil or gritty vegetable matter with greater freedom than through 2 inches of clay. It is an excellent practice to embed bulbs in and surround them with sand, or a mixture of sand and wood ashes, and too much importance cannot be attached to early planting. The more the crowns extend from bulbs out of the ground the worse it is for them, and root-extension should be slightly in advance of top growth for securing "complete success."

Names of Fruits (*J. Truro*).—1, Rotten; 2, Autumn Bergamot; 3 and 6. Béurre Hardy; 4, Catillac; 5, Red Doyenné. (*R. G.*).—1, Fondante Charneu; 2, Marie Louise; 4, Josephine de Malines; 5, Urbaniste; 6, General Todtleben. (*J. A. W.*).—The Apple is not King of the Pippins but Kerry Pippin. (*J. D.*).—1, Duchess's Favourite; 2, Rotten; 3, Scarlet Russet; 4, Fondante d'Antomne; 5, Doyenné du Comice; 6, Easter Beurré. (*J. Udale*).—1 London Pippin; 2, Lane's Prince Albert; 3, Trumpington; 4, White Astrachan. (*Walter Kruse*).—The Pear is correctly named Calebasse. The Apple Flanders Pippin. Atkins' Fancy is new to us. (*J. W.*).—1, Duc de Nemours. 2, not known. 3, Beurré De Jonghe. 4, Vicar of Winkfield. 5, not known. 6, new to us, a delicious little Pear. (*Gilbert Wootten*).—1, Beadnell's Seedling; 2, not known; 3, Beurré Amande; 4, Comte de Lamy; 5, not known. 6, Jersey Gratioli.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. G.*).—1, Retinospora ericoides; 2 and 6, Cupressus Lawsoniana varieties; 3, Juniperus sinensis; 4, Cupressus torulosa; 5, Abies Douglasi.

COVENT GARDEN MARKET.—NOVEMBER 7TH.

MARKET very quiet, with no improvement in prices.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Lemons, case	10 0	to 15 0
,, Nova Scotia and Canada, per barrel	10 0	22 0	Oranges, per 100	4 0	9 0
Cherries, ½ sieve	0 0	0 0	Peaches, dozen	2 0	6 0
Cobs, 100 lbs.	100 0	0 0	Pears, dozen	0 9	1 6
Grapes, per lb.	0 6	2 6	Plums, ½-sieve	2 0	4 0
			St. Michael Pines, each	3 0	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 10	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	0 0	0 0
Broccoli, bundls	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	3 0	3 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	1 0	2 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsafy, bundle	1 0	1 6
Coleworts, doz. bnnches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 8
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bunches	3	to 6 0	Marguerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	3 0	6 0	Mignonette, 12 bunches	3 0	6 0
Asters, dozen bunches	6 0	12 0	Narcissus (Paper White), 12 sprays	1 0	1 6
,, French, per bunch	1 6	2 6	,, (French) dozen bunches	4 0	9 0
Azalea, 12 sprays	1 0	2 0	Pelargoniums, 12 trusses	1 0	1 6
Bouvardias, bunch	0 6	1 0	,, scarlet, 12 trusses	0 6	0 9
Calceolaria, 12 bunches	0 0	0 0	Pyrethrum, doz. bunches	2 0	4 0
Camellias, 12 blooms	3 0	4 0	Roses, Red, 12 blooms	0 6	1 0
Carnations, 12 blooms	1 0	2 0	,, (indoor), dozen	1 0	2 0
,, 12 bunches	0 0	0 0	,, Tea, dozen	2 0	4 0
Chrysanthemums, 12 bl.	1 0	4 0	,, yellow	3 0	6 0
,, 12 bchs.	6 0	12 0	Stephanotis, 12 sprays	4 0	6 0
Cyclamen, dozen blooms	0 4	0 9	Tropæolum, 12 bunches	1 0	2 0
Dahlias, 12 bunches	0 0	0 0	Tuberoses, 12 blooms	0 6	1 0
Eucharis, dozen	4 0	8 0	Gladiolus, 12 sprays	3 0	4 0
Gardenias, 12 blooms	1 6	4 0	Violets, 12 bunches	1 6	2 0
Hyacinths (Roman), doz. sprays	1 0	1 6	,, Parme (French), per bunch	3 6	5 0
Lapageria, 12 blooms	1 0	2 6	,, dark	1 6	2 6
Lilium longiflorum, 12 blooms	6 0	9 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Evergreens, in var., dozen	6 0	to 24 0
Arum Lilies, per dozen	9 0	12 0	Ferns, in variety, dozen	4 0	18 0
Arbor vitæ (golden) dozen	12 0	24 0	Ficus elastica, each	1 6	7 0
Asters, 12 pots	4 0	9 0	Foliage Plants, var., each	2 0	10 0
Begonia, varicus, per doz.	4 0	9 0	Fuchsia, dozen pots	3 0	6 0
Chrysanthemum, doz.	4 0	9 0	Genista, per dozen	6 0	9 0
,, large, doz.	15 0	24 0	Hyacinths (Roman), dozen	9 0	12 0
Coleus, dozen	2 0	4 0	Lilium, various, doz. pots	12 0	21 0
Cyclamen, dozen pots	9 0	18 0	Marguerite Daisy, dozen	6 0	12 0
Dracæna terminalis, doz.	30 0	60 0	Mignonette, per dozen	4 0	6 0
Erica hyemalis, doz.	12 0	24 0	Myrtles, dozen	6 0	12 0
,, grscilis, doz.	9 0	12 0	Palms, in var., each	2 6	21 0
,, varicus, doz.	8 0	18 0	Pelargoniums, scarlet, 12	3 0	6 0
,, viridis, dozen	12 0	24 0	Primula (single), per doz.	4 0	6 0
Euonymus, in var., dozen	6 0	18 0	Solanums, doz.	9 0	15 0



WINTER CORN.

At the very beginning of another farming year we were beset by weather difficulties, for at Michaelmas the time for sowing winter corn had come, but owing to the dry weather land which had been ploughed during harvest had become so dry and hard that it could not be brought into condition for sowing till softened by rain ; this was one weather difficulty. Another was that much of the land to be ploughed for winter corn was so hard that the ploughshare would not enter, and it also had to be left till rain enough fell to soften it. Meanwhile a discussion was going on in the pages of a contemporary about the respective merits of a stale and fresh furrow for sowing Wheat, just as if farming work was never the sport of seasons or weather, and we were able to prepare the soil at a given time and sow the corn to a day. What is the fact this season ? Why, that we are ploughing and sowing as fast as we can without regard to line and rule. All we care for is to get the soil into a suitable condition for the speedy use of drill and harrow, so that the seed may be sown without the loss of a day.

The cultural points of real importance are these. The soil must be drained either naturally or artificially, so as to insure the speedy passage of superfluous water through and away from it. Soil that is water-logged is so inert and cold that it never can yield full or profitable crops ; manure is wasted upon it, for no matter how abundant and rich may be the dressing of manure, how thorough may be the tillage, how good the seed, no satisfactory result can follow till it is relieved of the water. This done, however, Nature's treasure house is at once unlocked and the fullest measure of success is then possible if only we keep the soil free from weeds, render it thoroughly fertile, and keep it so. Is this done by farmers generally throughout the country ? The best answer to this query is found in the estimates and reports of the Wheat crop of the current year. All concur in placing the average below that of last year, and this goes to prove that the corn crop in badly cultivated soil is much more liable to suffer from bad weather than that under high cultivation. If this were not so how is it that we find such a wide difference in results upon neighbouring farms ? It does not answer to take things for granted and to talk of good soil and bad soil as if soil improvement were impossible.

Though the season is so much advanced the hardening of prices will probably cause much more Wheat to be sown than was done last year. If this is done well results will be satisfactory ; if not, far better would it be not to sow the Wheat at all. How can we expect a full crop from soil in a half-barren condition ? It is true enough that land can now be had at a very low rent, but in most cases farmers would find it answer to curtail rather than enlarge the bounds of their holdings. If it is possible for a farmer by high culture to cause one acre of land to yield as much or more than he formerly obtained from two acres, surely every sensible man would try and do so. This is the point which it is so important should have full and general recognition. How is it that a Jersey farmer with his seven or eight acres of land is able to thrive and put by money ? It may be said, and well said, that a man with such a small holding is bound to cultivate it as highly as a garden to get a living out of it. Just so, then why not copy his practice and apply it to farming generally ? If this were done it would lead to a more radical change both in the size of farms and in farm management. But depend upon it the change would prove wholesome and highly beneficial, for then a great improvement both in the quantity and quality of the farm would follow.

One of the best tilled and most productive farms we know is only 60 acres in extent, and every square yard of it is turned to full account. The tenant apparently has no thought of any of his land requiring a bare fallow, but rather strives to crop the whole of it once, and much of it twice yearly. His yards are kept well stocked with pigs ; by watching market sales he gets together a small flock of lambs early in the year at a cheap rate, and they are at once put upon the land in folds and kept there till ready for sale as fat hoggets in winter or spring. So by means of sheep, pigs, and horses he contrives to enrich his land sufficiently to keep it in condition for constant cropping. It is by following the ploughs and harrows closely and picking up weeds every time the soil is stirred that he contrives to keep it clean, and so avoids having any of it in fallow. We have wandered slightly from our subject, which has led up to such a train of thought, but we know that every record of good practice has its special value, and can never be out of place in connection with any subject bearing on practical farming.

WORK ON THE HOME FARM.

Enough rain has fallen to soften the soil sufficiently for corn sowing, which is now being pushed on so fast that a week or two of fine weather will enable us to finish this important work. Wheat has to be drilled with care, and the soil must be first stirred with harrows, the drill follows, and then a turn or two with harrows gives the requisite finish to the work. All seed corn is carefully cleaned and no inferior grain is sown. " If we would have a full crop of really fine Wheat we cannot be too careful in the selection and preparation of the seed. After cleaning the seed it should be dressed with blue vitriol, 1 lb. to 4 bushels of Wheat. This is done by dissolving the vitriol in a quart of hot water, to which add 2 gallons of cold water. Spread the Wheat upon a barn floor, pour the vitriol water over it, turn the Wheat over a few times, and it is ready for use. On very large farms it is customary to have a tank filled with vitriol water into which the Wheat is lowered in a wicker basket attached to a pulley, by which means a large quantity can soon be steeped. Winter Beans and the last crop of winter Tares have been ploughed in. This is done by attaching a single drill to a plough, two ploughs following without drills for Beans, and one plough without a drill for Tares. The advantage of this plan is that the seed is sown at once without the use of the large drill and harrows, much labour being thus avoided, as well as any loss of time in sowing, which frequently happens if rain follows the ploughing.

The clearance of the Mangolds from the land was finished before the weather broke, and we have a fine store of roots for the lambing season. A certain quantity of Mangolds are used for the horses all through winter, the roots being minced and mixed with Barley chaff. So far as we are aware this use of Mangolds for horses is not general ; certainly it is not done in Kent and Sussex, where Carrots have the preference as horse food. There is no doubt that some such succulent juicy food in winter is highly beneficial for horses.

Kinver Chevalier Barley.—We learn that at the Brewers' Exhibition, London, last week, Webbs' Kinver Chevalier Barley was awarded the champion cup open to the world, and first prize silver medal for the best malting Barley, and that this is the second year in succession that these honours have been won by this celebrated variety.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. Oct. and Nov.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 28	30.243	60.2	56.6	S.W.	50.0	65.2	55.4	77.6	50.1	0.276
Monday 29	30.238	55.0	53.8	S.W.	50.9	55.8	53.4	57.8	50.4	0.505
Tuesday 30	30.000	49.3	49.0	N.E.	50.2	52.6	47.4	60.6	44.3	0.262
Wednesday .. 31	29.997	48.7	48.7	S.W.	49.3	55.3	44.2	70.7	39.2	—
Thursday 1	29.535	44.3	44.3	N.E.	48.6	48.2	42.3	49.1	38.0	0.672
Friday 2	29.4 3	47.4	47.1	S.E.	47.8	49.8	43.7	53.6	43.3	0.947
Saturday 3	29.593	46.8	46.8	N.	48.0	49.8	45.3	53.3	44.7	0.050
	29.873	50.2	49.2		49.3	54.0	47.4	60.4	44.3	2.652

REMARKS.

28th.—Fine, with some sunshine; rain in evening and night.
29th.—Dull and damp early, wet day.
30th.—Wet morning, gloomy afternoon, fine evening and night.
31st.—Bright day, cloudy evening, solar halo in afternoon.
1st.—Fog all morning, rather dense early, gradually changing to rain in afternoon, heavy rain in evening and night.
2nd.—Overcast morning, wet afternoon and night.
3rd.—A dull drizzly day. Dense high fog, rendering gas necessary from 11 A.M to 0.15 P.M. At 11.20 impossible to read the largest type close to a window, and at 11.35 in the open air a board about 3 feet by 1 foot, painted white, was invisible while within reach of the hand.

A very wet week, temperature remarkably uniform in the latter part of the week.—G. J. Symons.

SIMPLICITIES.

MANY practical gardeners and competent amateurs hesitate to communicate their experience because they feel it is of a common-place nature, and that the narration would neither display their erudition nor scientific accomplishments. That is a mistake. Some years ago a gentleman desired what his gardener was not producing for him—good Grapes. The man thought himself, and endeavoured to convey, that he was a scientific gardener, and discoursed learnedly by way of explanation about the principles on which his practice was based, not omitting sundry references to the action of oxygen and carbonic acid gas on vegetation. He was, in fact, talking the master over by a process of mystification, but was met with the stinging retort, "I hear what you say and wish you to understand that I would rather have less gas and more Grapes." That represents the desire of the vast majority of owners of gardens. They want good produce of various kinds in season, and often as much out of season as means allow, and sometimes more than they will permit. This latter is an unfortunate contingency, and beyond doubt it would be a great advantage if the true resources of gardens were appreciated by their owners, as this would in many instances result in a modification of expectations, and a man who is worth his salt will strive to the utmost of his power to make the garden of a considerate master both pleasurable and profitable. He cannot do this without going into the simplicities of his vocation, for these form the basis of success.

Indoors and out and at all seasons what are known as simple duties must be performed, or satisfactory results cannot be achieved. What is more simple, for instance, than sowing Peas? yet what is more important than a full supply of pods for gathering at the earliest possible date? and what more disappointing than being a week or ten days later than a neighbour who grows them under similar conditions, but differs in his methods? Years ago the good old kitchen gardeners rarely failed in the first early Pea crop by simply sowing in November, but some advanced gardeners of the present day appear to think the old practice obsolete, hence they sow in pots in frames, "gradually harden the plants," then plant them out and shelter them as if they were so many bedding plants. No doubt the plan of first making young Pea plants tender then "hardening" them answers or it would not be practised and advocated; but this does not prove the failure of the old method of sowing in the open and letting the plants assume a hardy character from the first; and though a few rows may fail now and then, if too advanced when a sharp spring frost occurs, those raised in pots and planted are liable to be similarly injured or destroyed; and it is an open question if more of these are not damaged than of the others that have passed through the winter in the open ground.

Some gardeners who have been "brought up" where every convenience in the way of frames and other glazed structures were provided, have arrived at the conclusion that it is of "no use sowing Peas in the autumn nowadays," and therefore raise all the plants for their early crops "under glass," just as there are other men who are firm in the belief that the days of successful Peach culture on open walls are gone for ever "because the seasons have altered." Are these propositions, as the lawyers say, true in substance and in fact? Are there not gardeners a hundred miles north of London, and even more than twice that distance, who seldom fail to have good crops of Peaches on garden walls, the fruit ripening well, and in quality equal to that grown under glass? And are there not other gardeners who sow Peas in November with as much confidence as their fathers had that in due time good crops would be ready for gathering during the last week in May or early in June, according to the season—crops even more abundant as a rule than those borne by plants raised in pots, according to the modern course of procedure?

As to the failure of Peaches outdoors, it is not the "seasons" as a rule, but insects, that lead to failure—aphides at the outset retarding the growth then, which is equal to a loss of time that may be counted by weeks, and can never be regained; then in hot summers comes the scourge of red spider, arresting growth, and depriving the trees of juices that are essential to their health and fruitfulness. Is not this shortening of the season at both ends sufficient to account for the failing of Peaches on walls? The "seasons are altered" with a vengeance, but altered by insects that were permitted to increase by the forbearance of man, who did not see the importance of having recourse to preventive measures, but preferred to wait till he had something to kill—that "something" in the meantime ruining the trees. All that is very simple, but the more it is thought about the more clearly it will be found to be true; and if the fact was not appreciated before, evidence is at once afforded of the tendency of even generally close observers, and in many ways able men, to overlook simplicities. These cannot be ignored with impunity, for the neglect of small matters at a critical time has often far-reaching effects, and a penalty has usually to be paid in some form or other for the omission, sooner or later, trifling or serious, according to results and the special circumstances surrounding each case.

November sown Peas fail if raised too early, and also if the work is unduly deferred. "Do not sow before the 5th of the month nor after the 20th" was the advice of one of the best kitchen gardeners, who during thirty years of practice was able to say he had never failed in his early Pea crop. If sown before the date first named the plants are liable to get too forward; if sown after, and a term of cold and wet weather sets in, much of the seed is apt to decay. The method of sowing is also important. It was pitiable to see a man the other day trampling the soil of a south border into semi slush, the earth adhering to boots and implements like so much birdlime. Yet he was sowing Peas, and if the crop fails, as it may, it would be curious to hear from the cultivator the cause to which he will attribute the failure.

There are only two ways of sowing Peas at this season of the year that indicate good workmanship, and can be trusted to answer the purpose in view. One is to dig the land on a dry day, sowing as the work proceeds; the other to make the drills and sow from a wide board, pointing up the compressed surface after the board is turned over. Nothing could be simpler than that, but the simplicity is not to be laughed at. The great point to secure is the free passage of water and air through the soil, and the little matters alluded to contribute to that end, while the rough trampling plan frustrates it. Bearing that in mind, the habit of treading the drills for Peas that may be practised in summer with impunity, is in most soils, and certainly in all of a retentive nature, a plan to be avoided in November. The drills should be level undoubtedly, but light and porous so that the rain can freely filter through instead of being retained where it could not possibly do good, and might do considerable harm.

One or two other precautions are taken by gardeners who are successful nine years out of ten with the crop in question. If the ground is wetter than they wish, yet the date late and the work must be done (through the possibility that by waiting longer would be to fare worse) they spread half an inch or so of dry soil for the Peas to rest on, and cover them with a similar layer before levelling in the natural soil. That may appear a trifling matter to refer to, but failure is no trifle, and the simple provision mentioned has often been a chief factor in the success accomplished. Another little matter, notwithstanding its simplicity, is worth noting for the benefit of the young and inexperienced, as these are always with

us, and it is to be hoped always will be—namely, the depth of covering the seed. This may be buried 4 or 5 inches deep in late spring and early summer without any ill effect: but it is very unwise to act similarly in November. A simple plan proved sound by a generation of experience is to cover the seed an inch deep, or a little more if the soil is light and porous, then spread an additional inch of ashes on the surface exactly over the rows and extending a couple of inches on each side wider than the drills. This covering serves three or four good purposes—its porosity, admitting water and air; its sharpness, making a good barrier against mice in winter and slugs in spring; and its dark colour absorbing more of the sun's rays than the soil can possibly do that is many shades lighter in hue; or, in other words, the Peas lie warmer under the ashes than they would without them, and growth is quicker after the winter has departed, because the earth is warmer through their influence, and in obedience to the same law that makes black coats and hats warmer than light ones when the sun shines on them.

All this is very simple, no doubt, to many, and mere rudimentary truth; but there are others who have not thought about the great influences of little things, and are seldom led to do so by the teaching of their elders. Yet is it not correct to say that men who become the most competent in their calling are those who take the greatest pains in their work, no matter what it may be? No item is too small for them to consider, no work too simple for them to do, and it is because they digest the items and master the simplicities that they accomplish with apparent ease the fame that is their reward. "It must be easy to paint a picture like that," observed an on-looker to a famous artist, who with quick and easy freedom was displaying his skill. "Oh yes, quite easy," was the comforting reply, "You have only just to mix the right colours, and put them on in the right places, and the work is done." That was easy to the artist, who, we may be sure, had overlooked nothing however small, that had contributed to the education of the eye and hand. And so it is with others, including gardeners, and in none more than those who have good crops of Peas by sowing in the autumn, good crops of Peaches on open walls, not to mention the men who win the first prizes with Chrysanthemums in the best competition in November.—EXPERIENTIA DOCET.

APPLES AND PEARS IN WALES.

WALES was not well represented at the late Chiswick Conference. I know one at least who worked hard to reverse this, but it was not so much the unwillingness of growers as their inability that prevented exhibits being forwarded. As viewed from Wales, or indeed from anywhere, Chiswick is a great place. Growers in Wales who have any respect for themselves and their country do not care to send specimens for exhibition to London unless they are representative of the average production, and as a rule Apples and Pears have been much below the average in quantity and quality in the principality this year. At the best of times Wales is not a first-rate fruit country, but this, be it fully understood, is not so much due to want of skill in culture as to a marked deficiency of natural adaptabilities. In many cases there is no overcoming these, as the soil and climate—not the natural climate, but that produced by the development of different forms of industry—are so antagonistic to Apples and Pears generally that all attempts have proved futile. There is no class of people more anxious to grow good fruit and plenty of it than the Welsh, and I have often felt sorry after I recommended amateurs to plant trees to find that they failed prematurely or nearly so from canker and other causes that are unheard of in many of the best English growing fruit counties.

Small fruits are abundant, and it would be difficult to surpass them. In good Apple and Pear years many gardens in Wales will hold their own in the production of fine fruit, but this year, besides being deficient, they are below the average in size, and they do not display much quality. A good indication of this was noticed at the summer and autumn shows, where Apples and Pears were worse than I have seen them for a dozen years. Glamorganshire is one of the poorest Apple and Pear counties, but Carmarthenshire is better, and so is Pembrokeshire, as neither of these counties is so much overrun with works and the consequent vapours as Glamorgan, and I do not know of any reason why Carmarthen and Pembroke should not be as profitable fruit counties as Hereford, Gloucester, Somerset, or Devon. The climate is favourable, so is the soil generally, and judging by the fine crops in small gardens in Carmarthenshire and Pembrokeshire I think fruit culture might be extended there to advantage if proper varieties were selected and carefully planted.

There is abundance of room for improvement on the present system of culture, as this chiefly consists of retaining old trees that have long passed their best, giving them little attention and showing but small inclination to introduce new and improved sorts. I hope that the movement that is awakening English landowners to the advantage of improved fruit culture will have some influence in Wales; but it is not so much professional gardeners that will be benefited by it as amateurs and farmers. When I go from home and pass through some of the English counties where many of the hedgerows and fields are studded with Pear and Apple trees a profitable system of culture is indicated which we could not see imitated during a week's travel in Wales. I should like to see many of the existing Apple and Pear trees destroyed. They are too old, cankered, and debilitated ever to produce fruit that would be regarded as good at any future conference. Their place should be taken by healthy young trees of sorts noted for their free bearing and good qualities everywhere. I would not have those who have proved Apple and Pear culture to be a failure under their circumstances attempt it again, on an extensive scale at least, but where the situation is away from the influence of the works, and there are many such, Apple and Pear culture should be begun and energetically followed up at once. At present the bulk of the Apples and Pears used in Wales are imported from the western counties of England, the demand for them is very great, and the prospect of every Apple and Pear that anyone cares to grow in Wales being readily and remuneratively bought up is as bright and encouraging as could possibly be desired.

Of late years I have induced some farmers to plant rather extensive orchards in various parts, and it may interest others who are inclined to do likewise to know that so far they are delighted with the results, and I have every confidence that in years to come they will be still more so. Those which are doing best are in cases where considerable attention was given to selecting and preparing the ground and buying good trees. The varieties I have noted as doing best in Wales are, Apples—Lord Suffield, Kerry Pippin, Hawthornden, Stirling Castle, Peasgood's Nonesuch, Golden Noble, Warner's King, Dumelow's Seedling, King of the Pippins, Northern Greening, Keswick Codlin, Court of Wick, Cellini, and Cox's Orange Pippin. Pears.—Bonne d'Ezée, Beurré d'Amanlis, Beurré Diel, Beurré Rance, Louise Bonne of Jersey, Souvenir du Congrès, Passe Colmar, and Josephine de Malines.—CAMBRIAN.

PLUMIERIAS.

I WAS much interested in reading the article in the Journal upon the Plumieria, and possibly, as you say that the plant is not much known, a few remarks may be acceptable to some of your readers. I was, however, under the impression that there is a fine specimen of the plant at Kew, as some years since my brother-in-law, Sir J. F. Dickson, whilst resident magistrate at Anaradhupurn in Ceylon brought me some cuttings which, if my memory serves me well, my late gardener, Mr. W. Wright, identified from the plant in the Kew collection. It is really a tree and not a bushy plant, and being held as sacred to Buddha is usually planted in the enclosures of the Temples, from which it derives the name by which it is ordinarily known—Temple Tree—and the flowers are presented as offerings to the god. The flowers furnish also the scent known as Frangipani. The habit of the plant is to flower before the new growth commences, and after blooming the branch divides into three shoots. The flower stalk is produced from the central axis of the branch as a strong single growth for about 2 inches, which divides into three or four smaller stalks, each with a row of buds on the upper surface, and the buds open successively on the stalks, so that it seems rare to find more than two at a time open on the same stalk. I presume from seeing the full cluster that is shown on Mr. Cannell's plant that it may be some different species to ours, of which I enclose a photograph, and I understand that our plant is decidedly flowering out of season, as it has bloomed immediately after making growth. Sir Frederick Dickson tells me that he believes the botanical name of our species is either P. longifolia or lancifolia, but he does not remember which.—C. M. MAJOR, *Cromwell House, Croydon.*

[The photograph received is very good. So far as we remember the flowers produced by the plants at Cromwell House were not quite so large nor so intensely yellow as those sent by Mr. Cannell

and illustrated on the page cited. We thank Mr. Major for his interesting communication.]

YOUNG VERSUS OLD FRUIT TREES.

WITHOUT wishing to depreciate the value of some large old fruit trees, which under good culture frequently yield large and profitable crops, I am yet disposed to assert that, as a rule, much younger trees are more to be depended upon. In very many instances the old giants are mere cumberers of the ground. It is only occasionally they bear anything approaching a heavy crop, and very rarely indeed is the quality of the fruit other than second rate. When these large old trees happen to be the survivors of what was once a well stocked orchard there is no great wisdom in destroying them, as they afford shelter or shade to stock grazing near them equally as well as ordinary forest trees, and in addition will yield a certain amount of fruit, which may be utilised in various ways. But when valuable garden or wall space is taken up by old and comparatively valueless trees the case is very different. Fine old Pear trees against walls, if the variety is worth preserving, ought not to be too hastily condemned, as it is quite possible to re-invigorate these by gradually lifting and shortening the principal roots, relaying these in fresh loamy compost. Nor would I cut down fairly large specimens of useful Apples before making an attempt to renovate them. For instance, that most valuable Apple Blenheim Pippin is rarely very fruitful till the trees have attained a large size, and such must therefore be taken more care of. Not many fruit growers could afford to partially lift and give much fresh soil to large Apple trees, but quite recently I saw a fine tree of Blenheim Orange that had been once condemned and then respited to see what good could be done with a heavy surfacing of solid manure. This tree is now carrying a profitable crop of fruit after having failed for several years past.

I give the foregoing advice upon the retention of old favourites by way, however, of exceptions to the rule, as, according to my experience, old and slowly decaying Apples, Pears, Plums, Cherries, Apricots, Peaches, and Nectarines do not give adequate returns for any trouble taken with them. It does not follow that these should be rooted up wholesale, but, on the contrary, it is generally unwise to destroy one set of trees before others are ready to take their place. Any intended improvements in the way of substituting young trees for old ones ought to be anticipated one or more seasons in advance, or in other words young trees should be bought and prepared as much as possible in the time allowed to take the place of those rooted out. This is, unfortunately, not possible in all cases, many persons having a most inexplicable objection to their gardeners purchasing trees before it is absolutely necessary; in fact, there are numerous badly furnished walls in this country that are so entirely owing to this mistaken notion of economy. Those who imagine that it is useless for them to plant trees, seeing that there is little likelihood of their enjoying the fruit, err greatly. Proprietors of gardens and orchards are not a particularly short-lived race, and it is surprising how soon a tree attains a fruitful size, especially when it is not watched too closely, because the "watched pot never boils." Those who are most apt to grumble are the owners of gardens where very many of the trees are young. Let young trees be planted always in advance of the decay or clearance of the old ones, and the change will gradually be effected without any perceptible falling off in the supply, the quality gradually improving according as the healthy specimens arrive at a bearing state.

Occasionally we see gardens where the walls are so well furnished as to render it a difficult matter to introduce young trees between them, but as a rule there are plenty of suitable vacancies for the preparation of youngsters, and these ought to be utilised to their full extent. It is even desirable to introduce fresh trees where the garden is already well stocked, with the aim of improving the selection. There are always some failures either as regards the well-doing or the quality of the fruit of certain varieties, and with good trees of newer or better varieties at hand there is less hesitation in rooting out a healthy yet unprofitable specimen. Apricots, Peaches, Nectarines, and in a lesser degree Plums and Cherries, are very liable to lose whole limbs or the best portion of the tree from gumming or other causes, vexatious gaps being the result. With plenty of young trees ready to pop in where required the wall space is soon refilled, and much annoyance avoided. In the case of all trees to be grown in the open garden or orchard there is less excuse for neglecting to plant a few occasionally, as such do not encroach seriously on the garden ground. It is not my intention in this paper to discuss how many years it takes for a tree to arrive at a free bearing state, and will only repeat they are by no means necessarily planted for the sole benefit of those who come after us.

Which is the best form of tree and the most suitable stocks could not well be stated in a brief compass, so much depending upon circumstances; but as a rule I prefer to purchase medium sized well ripened maiden trees, or those which have not been cut back. These invariably form the healthiest trees, and soon surpass the majority of those that have been repeatedly pruned and trained in the nurseries. This is no novel idea, nor is it advanced from any desire to prejudice nurserymen in any way. The fault is not theirs, as they must prune and train as long as they have their trees in stock, and we have only ourselves to thank if we plant much-pruned, or it may be large yet stunted examples which do not take kindly to their fresh quarters, or which, perhaps, will canker or gum badly before they have long been in position.—W. I. M.



CYPRIPEDIUM FITCHIANUM.

IN the last issue of the "Orchid Album" Mr. B. S. Williams gives the following description of the above-named hybrid Cypripedium.

At the present time the genus Cypripedium is exceedingly popular, and new forms are continually appearing through importations from abroad, as well as from the work of the hybridiser at home; indeed, the crossing and recrossing of the different species and varieties appears to be a favourite pursuit with amateur growers, as well as those connected with the trade in orchidaceous plants, and from the result of whose work many excellent, new, and beautiful varieties have emanated, whilst from the experience gained in previous experiments, many other and superior forms may be confidently anticipated. Cypripediums are amongst the easiest of plants in the whole order to fertilise, and for this reason they have been taken in hand by the many. They also come freely from seed, and in most instances are robust in constitution and produce flowers in a young state, so that it is little wonder that they are very popular, especially as many of them produce showy flowers, although in a different degree of excellence, which continue long in full perfection. Many beautiful species and varieties of this genus have already appeared in the "Orchid Album," but there are many more which we hope to introduce in the same manner to the notice of our readers.

The plant is one which we had the pleasure to introduce to commerce in the spring of the present year, and which we have named in honour of our artist, Mr. John Nugent Fitch. It is the result of a cross between Cypripedium Hookeræ and C. barbatum. It is a very free grower, and also a prolific blooming plant, thoroughly distinct, both in foliage and flower, from any other kind known to us.

Cypripedium Fitchianum is a distinct and pretty variety, and compact in its habit. The leaves are oblong acute, from 4 to 6 inches in length by about 1½ inch in breadth, and prettily variegated; the ground colour is greyish-green marbled and spotted with deep olive green. The scape rises well above the foliage and bears a single large and handsome flower; dorsal sepal somewhat ovate cuneate, white, conspicuously veined with bright green, the lower sepal being similar in colour, but smaller; petals long and strap-shaped, with blunt ends, green towards the base, the apical portion and the margins being suffused with deep red, and bearing a few black hairy warts on the edge; lip large, dull red, veined in front with green, the inner surface profusely covered with dots and spots of red. It blooms in the winter months, and continues in perfection for fully six weeks.

We think this variety of Slipper Orchid thrives best in the East India house, as may have been anticipated by a knowledge of its parents, which are both natives of warm places in the east, but we find that this, and the majority of the other members of this genus, succeed best when shaded from the direct rays of the sun during the hotter part of the day, although they enjoy full exposure to the light, and we have recently observed great improvement in the health of the plants in one or two collections, where these plants have been subjected to a greater amount of shade from the sun than was formerly given them. Perfect drainage is essential to the health and well-being of Cypripediums, as during growth they enjoy copious supplies of water to their roots, which, however, requires to be passed away quickly; a slight syringing overhead in the morning, and again in the afternoon during the growing season, will be found highly advantageous. The potting material should consist of good peat fibre and living sphagnum moss. These plants

do not require a lengthened period of rest, but during this time syringing must cease, and a considerable reduction made in the quantity of water supplied to the roots, but even at this season they must not be dried, or evil results will follow.

Insects should be carefully watched for, and speedily destroyed if they make their appearance on the Cypripediums, or their leaves will quickly become marred and disfigured, and the plants fall into a sickly condition. Black thrips and red spider are amongst their worst enemies, but these may be effectually kept in abeyance by steaming the house occasionally with tobacco juice from the thanatophore.

DR. PATERSON'S ORCHIDS.

On the 10th inst. I had the pleasure of looking into Fernfield, Bridge of Allan, of having a "crack" with the worthy Doctor, hearty and enthusiastic as ever, a sight of the latest additions to his wonderful collection of "auld airn nackits" and valuable curiosities, and an inspection of the Orchids. Visitors daily turn into Fernfield, but I fancy it is not every day that the Doctor among them in a group of four embraces at once a blooming lass of sweet nineteen and a wondrously hale old gentleman of ninety-four years. The houses are again all but filled with young Orchids in the Fernfield state of health, and will before very long need all the accommodation at command. With others in bloom I found about a score of Cattleyas, including C. Gaskelliana, C. Percivaliana, &c.; Masdevallia ignea, M. Lindeni, Maxillaria picta, Miltonia spectabilis, Odontoglossum Alexandræ, Oncidium cucullatum, O. macranthum, O. Marshallianum, O. unguiculatum tigrinum, Phalænopsis grandiflora, Pleione lagenaria, Vanda tricolor, Zygopetalum Mackayi.

In the open flowers were still plentiful. In a hasty glance I observed Chrysanthemums, Rose Souvenir de la Malmaison and others, two lines of Yucca filamentesa, Tropæolums in profusion, Phloxes, &c., and everything was, as usual, in apple-pie order.—A Northern Amateur.

THE JENSEN SYSTEM OF MOULDING POTATOES.

During two successive seasons elaborate experiments and careful observations were made as to the effect of the Jensen system of moulding. The experiments were made at Chiswick under the superintendence of the Scientific Committee. Although results of considerable practical interest were obtained, yet the primary object of the experiments was frustrated by the non-appearance, or, rather, by the scanty development of the Potato mould. Moreover, it became apparent that the cost of the experiments, as then carried out, would be such as to preclude their imitation on a large scale for practical purposes.

During the present season the Potato disease set in at Chiswick with virulence about July 29th. Up to that time no attempt had been made to check its course or to note the conditions under which it occurred; but at the suggestion of Mr. Plowright two rows in juxtaposition were submitted to experiment on August 10th.

Two rows were 30 yards in length, the variety selected Schoolmaster, and the conditions as absolutely identical as possible, except that the one row was left moulded in the ordinary way, while the other was "high moulded"—that is to say, banked up on one side to form a ridge, while the haulm was slightly bent over to the other side. In the ordinary system of moulding a furrow is left along the top of the ridge into which it is surmised that the spores fall, washed off by rain from the foliage. The high moulding, it is supposed, obviates this by securing the fall of the spores on the ground between the rows, and not on the rows themselves. As the disease appeared to be equally severe on both rows, and was, moreover, far advanced, but little expectation was indulged in that the results would be of any value.

Nevertheless, on September 29th, the Potatoes in the two rows were lifted and examined, as dug, by Mr. Barron and Dr. Masters. It speedily became apparent there was a considerable difference between the two rows, and that the tubers from the high-moulded row afforded a much cleaner and more even sample. With a view to put this general impression to a numerical test, fifty tubers from each row were taken indiscriminately—twenty-five by one observer, the remainder by the other, so as to equalise, as far as possible, the "personal equation."

These hundred Potatoes were then examined with a more careful scrutiny, each one being cut open to ascertain whether or no it was diseased. The result was as follows:—Out of fifty taken from the row moulded in the ordinary way, thirteen were found diseased, or 26 per cent.

Out of fifty taken from the high moulded row five only were noted as diseased, or 10 per cent. No doubt a more careful examination by the microscope would have indicated a larger proportion of disease in each case, but it is not likely that it would have very materially altered the proportion either in one direction or the other. In order, however, to obtain further information upon this point, twenty-five tubers from each row were put aside for future examination. Of fifty tubers set aside at the time of lifting to show how many would show disease subsequently, the result is now—ordinary moulding, thirteen tubers diseased, twelve sound; high moulding, all sound.



HYBRID PERPETUAL ROSES IN POTS FOR FORCING.

The reason many fail with these Roses in pots is simply because they commence forcing them before they are thoroughly established. No greater mistake can be made, for the plants make only puny growth and produce the poorest flowers. This is not all, for they seldom succeed satisfactorily afterwards. They are ruined to start with, and those who wish to attain success in their culture will be wise to establish the plants thoroughly in pots, and then, if they are required to bloom early, to train them with the same care as Azaleas or Camellias require. Start the plants earlier each year, which will enable them to make and ripen a good growth, so that they have time to rest before being pruned.

Whether the plants have to be purchased, or home-grown plants are lifted, potting should not be delayed until the autumn has advanced and the plants are destitute of foliage. Very often when potting is delayed severe weather sets in and delays the operation longer than cultivators might desire. There are others who think all will be well if the plants are potted any time during the winter or before they show signs of growing in early spring. Such notions would soon be obsolete if the trouble was taken to pot one lot of plants in October and another in February and then compare the results.

It has been said by certain cultivators that they have lifted plants at the end of November and during the following month and have forced them successfully, the plants yielding very fine blooms. I do not doubt this, but it would be interesting to know what is meant by forcing. If the plants produced fine blooms I am mistaken if they did not allow them to come forward in cold frames or cool houses under almost natural conditions. I do not term protection by the aid of a cold frame or cool house, forcing. I have had good flowers from plants planted outside in December, but have always been of opinion that I have had better from those planted in October, and finer growth the first season.

I have always found some difficulty in getting Roses from nurseries for potting as early as I desired, and could never make out the reason. On two or three occasions, perhaps more, I have had a polite note saying they had not commenced lifting, the plants were scarcely ready. But when I purchase again I shall be prepared to take all risk, and shall have my plants from the middle to the end of October according to the season. A few soft young growing shoots on the top need not alarm anybody. When getting the plants from a distance the only risk to fear is that of the roots being dried before they are packed in damp straw. I have had plants from a distance and potted them at once on arrival; the foliage has remained fresh for a very long time afterwards, and they have made quantities of roots that have reached the sides of the pots before the end of November. Plants lifted at home have certainly the best chance, but if obtained from the trade early, and the plants receive proper treatment afterwards, they will not be far behind when the season for flowering arrives. I prefer the trade size plants to start with, and think they do better in the end than larger but older plants that may have been growing without being disturbed for some years.

When ordering plants it is wise to specify that they are required for pots, and those worked close to the root will be sent. I would not pot dwarfs that have a long stem, but all the principal growers work as close to the root as possible now. The Briar is decidedly the best stock on which to grow Roses in pots. The plants as a rule are not quite so large as those worked on the Manetti, but they start better the first season, and in the end make the best plants and last in good condition considerably longer.

For plants of the ordinary trade size 7-inch pots are the most suitable at first. These should be well drained by placing one good crock at the base, hollow side downwards, and then a number of smaller pieces round and over it. Over this place a little fibry loam to keep the smaller particles of soil from intermixing with the drainage, and on this a pinch of soot, which will act as a preventive against worms entering the pot through the hole at the base.

The plants need as a rule very little preparation. The unripe ends of the shoots are removed, and straggling ones cut back, leaving them about 2 feet long. The roots will need trimming; damaged portions should be cut back to where they are sound with a sharp knife, and strong fibreless roots may be well shortened back.

The soil must consist of good fibry loam of an intermediate nature between light and heavy; if the former, dry some clay and reduce it to powder and then add it to the loam. In this condition it can be mixed

freely and evenly; if the latter, add coarse sand, charred soil—anything that will keep it open and porous. To the loam add one-seventh of decayed manure, one 6-inch potful of soot to each barrowful of soil, and the same quantity of quarter-inch bones with the dust left in. The soil must he in an intermediate state of moisture; this is important, for if the plants are treated as I shall advise they will need no water at their roots until after they are pruned, if then. If the soil is dry it will be necessary to water the plants, but it is better to water the soil before it is used and throw it into a heap for some hours, and then turn and mix it thoroughly. On the other hand, the soil must not be used too wet; this is a much greater evil than the other, for if the plants are potted in wet soil they are seldom satisfactory. Potting is a simple process. The union of the stock and Rose should be just below the surface of the soil when the plants are finished, say half an inch. The soil should be pressed moderately firm into the pots.

A very usual practice with cultivators after the plants are potted is to stand them outside. This necessitates frequently watering the plants and does them considerable harm, besides washing away food supplies from the soil that will be required by the plants the following season. They make few, if any, roots when subjected to this treatment, and in addition must be placed in frames directly a few sharp frosts are experienced for fear of injury to the pots. The best plan is to plunge the pots in ashes, there is nothing better, covering the rim of the pot and surface of the soil. If this is done all the attention needed will be to syringe the plants during dry weather to insure the foliage remaining fresh. Water at their roots will not be required, evaporation is prevented, and the soil remains in about the same state of moisture when they are placed in frames as when they were first potted. This treatment suits the plants admirably, and they make fresh roots quickly. Before it is necessary to place them under cover—which can be done when convenient, for the pots are safe against frost—the roots will have reached the sides of the pots; in fact they will be sufficiently established to make a vigorous growth and produce fine blooms. The weather alone should guide the cultivator when to give the plants cold frame protection. Moderate frost will do them no harm, but if very wet weather sets in they are better in frames than outside. If the pots can be plunged in the frames all the better, but this is not important. The lights of the frames should be drawn off during fine weather.

The plants may be pruned the last week in January or the first in the following month, the shoots being well cut back and not left 6 to 8 inches in length, for they seldom break from the base, and therefore no advantage is gained. Two or three eyes on each shoot are sufficient. The plants may be arranged where they are to grow and the pots plunged to the rim. Each plant should have room to develope without being crowded. If they come forward under the influence of plenty of air they will make sturdy growth, fine foliage, and flower at the end of April, or they may be sufficiently retarded to just precede the outdoor supply. In this case they need not be pruned before the end of February. When they have flowered they can be plunged outside and placed during June or the early part of July into 9-inch pots. At this stage I will leave them, for if well cared for they will be in good condition for flowering in March the following season. Suitable varieties will be found on page 401 in the issue for May 17th last.—WM. BARDNEY.

DEEP PLANTING.

A POINT in Rose-planting, which I believe to be of the utmost importance, is the depth at which the roots are laid out. It is desirable for all budded dwarfs, and necessary for those on Manetti, that the union of scion and stock should be beneath the surface, that the Rose may form roots for itself; but, with this proviso, my advice would be, Plant as shallow as you can.

A good rule to remember in the transplanting of all trees and shrubs is not to plant the tree deeper than it has been hitherto. And as dwarf Roses are budded at the nurseries not more than half an inch below the surface, and frequently above it, I believe that to plant so deeply as to bring this junction 3 inches below the surface (as I have lately seen recommended) is always hurtful and frequently fatal.

I have witnessed during the past week the lifting of some Briar cutting Roses which were put in as fine plants this time last year. They proved a great failure, some actually dying, while the remainder just lived, and that was all, though old-established plants in the same bed with the same treatment did remarkably well. On lifting the cause of failure was, in my estimation, plain. The union of stock and Rose was about 3 inches more or less in each case below the surface, and the roots had been not "planted" but "buried."

Sometimes we get dwarfs sent us which have been budded too high, the union being 2 or 3 above the roots. If on Manetti I should consider such a plant worthless. A Rose on a long leg of Manetti could only be planted horizontally, and is practically of no use. If on the Briar, and it be determined to try it, I would not attempt to cover the union of Rose and stock, but plant the roots at a proper depth and let it take its chance. It may do well, though it has not as good an opportunity as it would have had if budded lower.

In planting Roses separately, or filling up gaps, it must be remembered that the freshly disturbed soil will sink, especially if the hole made be deep, or much manure has been added, and that the plant will sink with the soil; an allowance of half an inch at least should be made for this. In a general way I should consider 3 inches to be deep enough for any Rose roots; and indeed I have always found that, provided they are deep enough to be well out of the way of the hoe, the roots of Roses which are well eared for cannot be too near the surface. —W. R. RAILLEM.

TRIDAX BICOLOR ROSEA.

THE yellow-flowered Compositæ are so numerous in late summer and autumn that it is quite a relief to obtain any additions to the



FIG. 50.—TRIDAX BICOLOR ROSEA.

family in which the flower heads are of some other tint. The Zinnias and the Asters afford some of the best known examples of the diversely coloured Compositæ; but the plant to which attention is called in the woodcut (fig. 50) and this note, is by no means familiar in gardens. At Kew this year it has been very attractive, and it evidently is worthy of a place with other border plants from the great western Continent. The

flower-heads are of moderate size and neat shape, white with a strong suffusion of deep clear rose—a peculiarly bright and pleasing tint. They are freely produced. The plant is compact, of moderate height, and of easy culture.

MR. GEO. BUNYARD'S NURSERY, MAIDSTONE.

KENT is justly styled the Garden of England, and we men of Kent do not intend to yield the palm to any other county, and of this county there is no richer or in its way more beautiful portion than that which surrounds for some miles the county town of Maidstone. The soil generally is of that rich unctuous loam in which so many plants rejoice. Even Rhododendrons and Conifers, which are sometimes supposed to rejoice only in sand, flourish here as well as they do in the sandy hills of Bagshot, while it is a very Paradise for all kinds of fruit trees. Since Mr. Geo. Bunyard has taken the Maidstone Nursery in hand each year has seen additions and improvements, and here at any rate the Secretary of "the Fruit Growers' League," whatever that may be, will find no worthless trees, no inferior stock, but a large number of the very best varieties in cultivation. There is no doubt that a few years will see a complete revolution in our fruit culture, although it is very hard to drive into the minds of some people, that the old worn-out and cankery trees should be rooted up and young ones of good sorts planted in their stead, while owners of private gardens will surely see the wisdom of planting kinds that will be satisfactory both to eye and palate.

Mr. Bunyard kindly met us at the Barming station, on which his nursery abuts, and we then began our round. It must be remembered that the nursery is a very extensive one, and shaped somewhat like the letter U, and that by the time you have got round it you have accomplished a good afternoon's work. As my object was to see the fruit trees I must leave unnoticed many other interesting parts of the garden, where trees, flowering and evergreen shrubs, herbaceous plants and other things are exceedingly well grown. Some idea of the extent of these nurseries may be had when I say there are 400,000 fruit trees of various kinds. Of Apples alone there are 120,000. Some are cordons on the Paradise stock, then there are pyramids, bushes, and standards, while the growth in maiden trees was something remarkable. It is well known that this is not an Apple year, yet no one would think so who saw the beautiful little trees in this nursery—trees laden, although only 3 feet high, with richly coloured and large fruit. Taking the culinary Apples first, these were evidently most in favour with the public, and Mr. Bunyard had taken good care to meet that taste where it was correct, for a good nurseryman has not merely to follow the public, but, to a certain extent, to guide it. If anyone comes into a nursery to order trees and mentions some indifferent sort, the vendor will say, "Yes, I can supply it, but there is so and so, a much better Apple, which I would advise you to have." There are thus large breadths of such sorts as Manx Codlin, Duchess of Oldenburg, Worcester Pearmain with its lovely high colour, Grenadier, Lord Suffield, Potts' Seedling, Yellow Ingestrie, Ecklinville, Cellini, Stirling Castle, Bismarck, a most remarkable Apple, a new introduction from Australia; the fruit large and highly coloured, and the tree very productive. Then there are Gipsy King, Domino, Lord Derby, Lord Grosvenor, Mr. Gladstone, Colonel Vaughan, Calville Rouge, Lane's Prince Albert, Cox's Pomona, Small's Admirable, Alexander, Warner's King, Peasgood's Nonesueh, Mère de Ménage, Alfriston, and other fine sorts. But perhaps the most useful and best of all our kitchen Apples is Wellington or Dumelow's Seedling, a late and long keeper and well-known kind. And this is, I think, what must be aimed at in the future of Apple-growing in England. We are inundated with early Apples, but we want such kinds as will take the place of the American Apples, which do not commend themselves to our taste when we can get anything else; but Wellington is a sharp, well-flavoured Apple, not with that flat taste which most of the American Apples have. Of dessert Apples there were also some fine quarters, Irish Peach, Ribston Pippin, Cox's Orange Pippin, and other fine sorts. What a deal of nonsense people write about the Ribston Pippin dying out. Let anyone who writes this sort of rubbish only pay a visit to Mr. Bunyard's nursery, and they will be soon disillusioned; there are in fact in the whole of the nursery no healthier and better trees than those of this old and hardy fruit, but which I believe to be eclipsed by Cox's Orange Pippin, equally good in flavour, and not so hard to digest. But the finest examples of fruit were to be found on the potted trees, whether plunged outside or in the orchard house; these latter were perfect pictures, laden with handsome and highly coloured fruit, showing how great are the capabilities of a well-managed orchard house. Amongst these were Belle Portoise, a new and promising variety, of which Mr. Bunyard thinks very highly; Golden Noble, New Hawthornden, Peasgood's Nonesuch, and many of the varieties named above. Amongst early Apples Lady Sudeley was prominent, and is likely from its beautiful appearance, fertility, and excellent flavour to become popular It would be tedious to enumerate the many excellent examples of the very best sorts to be found here, but suffice it to say that when the Apple and Pear Conference have put before us what they consider the best this nursery is one of those where their wants can be supplied.

In Pears the nursery is equally rich, although as the Pear has not the economical value of the Apple, it is not so numerously represented, for while there are 120,000 Apple trees, Pears are only 35,000. They are cultivated on the Quince and Pear stocks. Great care has been taken to select the stocks which experience has proved to be best suited to each variety. There were large quantities of Williams' Bon Chrêtien, Clapp's Favourite, Souvenir du Congrès, Triomphe de Vienne, Doyenné du Comice, Fondante d'Automme, Durondeau, Beurré Hardy, Beurré Baltet père, Colmar d'Eté, Pitmaston Duchess, &c. These are to be had as pyramids, bush fruits, and cordons, and were in excellent health, although Mr. Bunyard has had to complain, as many of us have this year, of fruit cracking, especially such kinds as Doyenné du Comice. This is to be attributed I believe to the check which the fruit received during the cold and wet July of this year. The marvel is that more did not suffer.

Of Plums and Damsons, which are a more remarkable stock than Pears, there is a larger number grown than even of the Apple, the stock being about 175,000; in fact the Plum culture is one of the features of the nursery, and it is to be hoped that ere long a number of utterly worthless varieties which are cultivated in all parts of the country, so that when a good Plum season comes they are a complete glut, and, as was the case three years ago, rot by bushels on the trees, as no one would take the trouble of picking them, will be discarded. There were large quantities of Victorias and Rivers' Prolific, while amongst Damsons that most prolific variety the Farleigh Prolific, Kent Cluster, or Crittenden, is cultivated to the extent of 40,000. Anyone who wants to grow Damsons ought to grow this, for not only is the tree hardy and prolific, but the fruit has that true rough Damson flavour which other sorts are wanting in, approaching as they do in size and flavour more to Plums. As might be expected in a county so famous for its Cherries, there is a supply here ready to meet the demand, the Bigarreau being especially sought after. Nothing can be finer than the clean healthy looking orchard trees of these fine rare Cherries, and they are, moreover, true to name.

Need I say that the utmost courtesy and kindness was shown to us? All who know Mr. Bunyard will be sure of this. I know this is but one of many nurseries where fruit trees are grown for sale, and it is a comfort to know that if persons wish to embark in fruit growing they can do so under the happiest auspices.—D., *Deal.*

Notes & Gleanings

EVENTS OF THE WEEK.—The Chrysanthemum shows still constitute the principal horticultural events, but another week will nearly bring them to a close. To-day, Thursday, there are shows at Brixton, Reading, Pembroke, Stroud, Wimbledon, Lindfield, and several other places. On Friday the National Chrysanthemum Society's provincial show will be opened at Sheffield and continue on the Saturday. It will no doubt attract a large number of visitors, and most of those travelling from London will leave St. Pancras by the 5.40 train on Thursday evening. On Saturday a Show is announced at Derby. On Tuesday, the 20th inst., the Liverpool Show will be held, Birmingham and Rugby on Wednesday, November 21st, and Hull on Thursday, November 22nd. It may be noted that the Borough of Hanley Show takes place on the 20th and 21st, and is followed by a show at Newcastle, which is only about two miles distant, on the 22nd and 23rd. Messrs. Smail & Co. announce sales of bulbs and forcing roots on November 19th, 21st and 23rd.

—— LEEDS HORTICULTURAL SOCIETY.—In the absence of any suitable place for holding the usual summer Show this year the Committee respectfully ask subscribers to transfer their subscriptions to the exhibition of Chrysanthemums to be held on the 21st and 22nd inst., when from the promises of the principal exhibitors the Committee feel justified in announcing that the Exhibition will be worthy of extended support.

—— WE are informed that the Trustees of the British Museum have appointed MR. ALFRED BARTON RENDLE, late Assistant Demonstrator of Botany, Cambridge, an assistant in the Department of Botany at the Natural History Museum, in the vacancy occasioned by Mr. H. N. Ridley's taking the office of Director of the Botanical Gardens at Singapore.

—— MR. J. HIAM sends the following note on the ANOMALIES OF THE SEASON IN INSECT LIFE:—"It has been most singular as regards some of our commonest insects. The caterpillar plague will long be remembered; nothing approaching it do I remember. The winter moths are coming out in swarms as a natural sequence after so many caterpillars. On taking a light to an Apple tree that has been blighted in the summer, the female moths—which are wingless, or the wings undeveloped, so that they might cause them to be mistaken for spiders—may now be seen running about the trunk seeking a snug place to

lay their eggs, which will hatch out in the spring. No time should be lost in dressing trees to prevent the moths running up. In addition to the caterpillar plague we have had to contend with a ravenous host of earwigs. On one occasion only I killed, as nearly as I could tell without actually counting every one, 2750 in going round my garden and a small orchard. Against this as a set-off we have not had a wasp of any of the species which eat fruit and rob bees, and during the whole summer in all my walks I have only met with two solitary worker wasps. It will be curious to see if the race is actually extinct. It must take years to produce or establish these insects again if there are any left in other districts. Another curious fact is that there are no daddy long-legs this year, although there were grubs in the summer, as I know the starlings brought them for their young in the nests; yet in the fields and gardens no insects appear to have been hatched out. One other injurious insect (in the grub state) has been very scarce, the cockchafer or locusts as they are usually called. I cannot remember seeing half a dozen during the summer."

—— Lord Palmerston Pelargonium.—This old Nosegay variety has flowered more freely with me than any other during the past summer, wet and cold as it has been. The colour is rosy red. Vesuvius has scarcely flowered at all; West Brighton Gem, Henry Jacoby and others have grown very strongly, but have produced few flowers.—G. C.

—— Mr. F. Geeson of Midhurst writes:—"Mr. A. Pettigrew, on page 429, speaks of petroleum for Pear scale. As we have a great quantity of the pest, I would be glad to know at what strength it should be applied. I tried last winter 1 oz. to the gallon of water, and there are as many pests this winter as last. If Mr. Pettigrew would state the proportion of oil to the gallon he finds effectual and safe, I shall be glad."

—— We are informed that the Teddington Chrysanthemum Show was highly successful in all respects, the cut blooms being excellent and numerous. Mr. G. A. Bishop, The Grove Gardens, Teddington, won the principal prize, a silver cup, W. Furze, Esq. (gardener, Mr. Coombs) with Messrs. Munro, Bates, Allen, and Davies also exhibiting well. Mr. D. Anderson, the Hon. Secretary, has worked hard in the interest of the Society.

—— We regret to hear that Alderman Thomas Gray, of Morpeth, died on the 13th inst. The deceased gentleman was an ardent supporter of horticulture in the North of England, and took an especial interest in the Newcastle-on-Tyne Society, of which he was Treasurer for some time. He was widely known, and much respected by all who had the pleasure of knowing him, and a correspondent writes that he was "an enthusiast in gardening, a most genial friend, and an excellent business man."

—— A gardener recently staying at Southport in Lancashire sends the three following notes—"The small gardens about Southport are much better kept than is the case in the neighbourhood of many seaside towns. Evidently great taste and care have been exercised in planting them. Too often carelessness is the rule in such gardens, dead and dying trees and shrubs telling too plainly of the mistakes that have been made; but here evergreen Privet, Hollies, Euonymus, Aucubas, and such seaside plants have been planted and flourish amazingly. Poplars and Elms have been freely planted, and are doing well."

—— "The foreshore has been greatly improved during the past few years. A large portion of the beach has been converted into delightful grounds with walks freely interspersed amongst the grass, which is in capital condition. This is made cheerful during the summer by the introduction of flower beds of the ordinary bedding type, with annuals and perennials planted in the borders. The sea is a long way from the town, and to obviate this a large lake has been formed in front of these grounds. To carry out the same arrangements on the other side of the pier would be money well spent, and would undoubtedly prove profitable to the town."

—— "The Botanic Garden at Churchtown has been beautifully laid out, and has been gay with annuals and hardy flowering plants in the past season. Very few of the ordinary tender bedding plants are employed, and if this were done it would be impossible to have produced with them such a diversified and charming effect as has been the case. The grounds are well kept and varied with cool shady walks, Rose beds, and borders, water-loving plants and Ferns. Every bed and border where sun and light can reach is gay with flowers during the summer, for there has been ample room left at the front of all the shrubs for this purpose."

—— Liliums in Partial Shade.—Liliums unquestionably like partial shade. When fully exposed to the sun they gradually dwindle away, but in the shade, or where they are protected from direct sunshine, they increase in numbers and strength. We have a good number of Lilium tigrinum superbum, and those shaded by trees were the strongest, and have produced the greatest number of flowers on each spike. Although the trees are growing close to them, they did not appear to suffer last year by drought. Several other Liliums have also behaved in the same way.—W. B. L.

—— The Fig Harvest.—The Fig harvest this year has been good, while last year it was very much below the average. The whole crop, that practically supplies Europe and America and a great part of Asia, is gathered from a strangely limited acreage. The average yield is about 25,000,000 lbs. The yield of 1887 was much less. This year it will be a little over average. America is largely increasing her demands, and the London consumption grows more and more important every year. It is the "Lacoum" Figs that are sent in greatest quantity across the Atlantic. The whole Fig crop is gathered off very classic ground. The gardens lie along the valley of the Meander, and especially round the ruins of Ephesus. Turks and Christians work side by side, and in perfect amity.—(*Daily Paper*).

—— Writing about Phloxes, a northern correspondent says:—"These have been beautiful during the past season; the wet weather appeared to suit them, for they have never been healthier or produced larger trusses with us. Virgo Marie is a splendid pure white variety, and just coming into flower. Enfant du Rhone is very distinct, with its large amaranth reddish scarlet flowers. It is a grand companion to the one named above for late flowering. The last will flower freely until the end of October if planted in different aspects. Few plants are more effective planted in small groups about the pleasure grounds; if they are dashed by heavy rains, the flowers open so quickly that a few hours of bright sunshine renders them highly attractive."

—— The same correspondent remarks that "Rudbeckia Newmanni is not very attractive when planted on the dotted system in mixed herbaceous borders, but it is one of the most attractive plants in the garden when planted in moderate large masses. When six or twelve plants are planted about a foot apart and allowed to spread until they are well established, they are conspicuous either at the front of shrubs or surrounded with annuals or other flowering plants."

—— Gros Colman Grape in Pot.—When recently visiting Mr. Butts at Leigham Court Gardens, Streatham, I was much impressed with the value of this fine-looking Grape as a pot Vine. Mr. Butts had a Vine that had been in a very large pot two seasons; this season when I saw it, the Vine had eight good-sized bunches. It was growing in a Black Hamburgh house. The bunches were well filled, as black as jet, and from 1 lb. to 1½ lb. in weight. It is the improved flavour that I wish to note. Mr. Butts gave me a few berries to taste, and in comparison with some that were growing on a Vine planted out here it was much superior. In fact, I do not remember ever to have tasted it so good before at this season. It may be worth asking those who have not the accommodation to grow it planted out, but would like to have a few bunches, to grow a few Vines of it in a pot in a house that may be wanted for other purposes during the winter. When those were ripe they could be lifted into a warm dry Muscat or other similar house till wanted. While speaking of Leigham Court I may remark that I also noted good bunches of Muscats, the most useful West's St. Peter's and many others still hanging.—Wanderer.

NARROW VINE BORDERS.

This subject has been receiving some attention lately, but no more than it deserves, for if less expensive borders will give equally good results with those of the usual description, the fact cannot be too widely known. When individual cases are cited as instances of success or failure, erroneous notions are apt to be drawn from them which were never intended by the writer. It is well that success under difficulties should be recorded, whether it is the production of good Grapes in ordinary garden soil, or in borders much within the usual limits, or any other result which shows that the grower's heart was in his work. This acts as a stimulus to others. In like manner the chronicling of a failure comes as a warning. No gardener of experience can doubt that good Grapes can be grown well for a few years in comparatively narrow borders, but where the doubt will arise is respecting the length of period in which they will continue satisfactory. That this is generally believed in is shown by the manner that borders are usually made, only soil enough for a few years being placed in first, and other soil added as the roots show they require it. It would be interesting to

know how long Vines have proved satisfactory in narrow borders, and the treatment they received. Of course the definition of a narrow border will vary with individuals, but it may, I suppose, be understood to mean in a general way small in proportion to the Vines which derive their support chiefly from it.

My first experience with narrow borders was when a junior in an establishment where Vines were grown well. Pot Vines had previously been grown for an early supply with the uncertain result they usually produce. The bed in which the pots were placed was of fair dimensions; then a border was made and canes planted as soon as the pots could be removed. As they were forced annually when established their life was but short, and after several years, when signs of weakness were showing, they had to make way for others. Now for such a purpose as this a narrow border is in every respect preferable to one of the orthodox description.

At a later period I had charge of a vinery where from force of circumstances the border was what was generally considered too narrow, and yet the Vines for about four years bore excellent crops of good Grapes. After that time they began to colour indifferently, although the bunches were of good size and the berries quite up to the average. It seemed as if they had nearly exhausted the soil, and the feeding to which they were necessarily subjected had only the effect of carrying them on to a certain stage, and failing when the colouring began. Even top-dressing a narrow border has not the same influence on the Vines that it has on a more proportionate one, the crowded condition of the roots making it more difficult for all to get a share of its virtures.

My experience shows that for permanent Vines narrow borders are not advisable where borders in proportionate size to the vinery can be made, but, as several correspondents have so ably demonstrated, plenty of porous material in the soil is a matter of great importance whatever the size of the border.—M. D.

THE NATIONAL AURICULA AND THE NATIONAL CARNATION AND PICOTEE SOCIETIES.

(Southern Sections.)

As the writer of the report of the annual meeting of the above Society, held on October 23rd, which appeared in the *Journal of Horticulture* (page 390), I take exception to Mr. Douglas's statement that it was an inaccurate one. It was a fair, honest, and independent report, and my simple aim was to bring before the notice of florists the fact of the existence of societies that have of late appeared to hide their light under a bushel, and by giving publicity to the fact of their existence seek to increase their usefulness. As I am not in any way responsible for the "adverse criticisms" founded upon these reports, it is not necessary for me to refer to them. The main point in Mr. Douglas's contention is, not that I was guilty of an inaccuracy, but of an omission—namely, that I said nothing about application being made to the Royal Horticultural Society. I was silent about it because I heard nothing respecting it of a definite character. The place for holding next year's Exhibition of the National Auricula Society was certainly discussed, and a general condemnation of the Drill Hall at Westminster indulged in. Those who were at the Exhibition held there in April last will remember it was so dark within that the colours of the flowers could not be determined with accuracy. It was assumed that as the R.H.S. gave the Society nothing in 1888 they were hardly likely to do so in 1889, therefore it was agreed that Messrs. D'Ombrain and Hibberd should approach the Crystal Palace Company to see if terms could be obtained from that quarter. I objected to going to the Crystal Palace on the ground of its distance from London, and I said that supposing the Council of the Royal Horticultural Society were to agree to carry their meetings to Chiswick, that it would be better to hold the Show there without a subsidy than at the Crystal Palace with one; but I heard nothing about approaching the Council of the R.H.S., and, indeed, that seems to be an afterthought on the part of Mr. Douglas. Mr. Douglas appears to think that he as the Secretary to these Societies should have, and indeed possesses, the exclusive right to send reports of their proceedings to the gardening papers, but I hold that the annual meetings of these Societies are as interesting to horticulturists as that, for instance, of the Royal Horticultural Society. They are Societies appealing for public support, and it is only fair the public should be made acquainted with their proceedings. I object altogether to Mr. Douglas regarding these Societies as his sole property. Their existence is known to comparatively few, and for want of the knowledge they do exist, but this knowledge should be conveyed by means of impartial and independent reports, and not by those prepared by their officials, such reports being too often coloured according to circumstances. —Richard Dean, *Ealing, W.*

CANKER IN FRUIT TREES.

Referring to some comments on my paper on canker by two of your correspondents, I think Mr. Kruse may be led astray if he relies on analysis of his soil as a guide in estimating the ingredients of the manure required to supply its deficiencies. The father of modern agriculture, Liebig, says "Analysis gives but rarely a correct standard by which to measure the fertility of different soils;" and Ville, "The most laborious analysis is not able to throw light upon the most vital and essential questions of practical agriculture." The reason for this is very simple. Although the chemist can accurately determine the several ingredients of a soil, he cannot distinguish between such as are soluble and available by the plant and those which are insoluble, and consequently inert; therefore in attempting to cure canker the application of a complete manure, containing all which may be required for perfect growth, is more likely to produce satisfactory results. It is extremely improbable that the iron in Mr. Kruse's soil is a cause of canker. The 3·38 per cent. given in Dr. Voelcker's analysis is far from an excessive quantity. Some of the most fertile soils known contain three times as much of the peroxide. Nor need he have any fear of the acid in superphosphate producing injurious effects, but its use may involve a question of economy, as recent experiments seem to prove that undissolved phosphates are equally beneficial.

Some misapprehension exists of the object of my paper. It was not intended in any way to describe the nature of the disease so well known as canker, but to suggest what are the circumstances under which it may make its attacks, and the means by which these may be warded off, and possibly the disease cured.

It is not improbable that the disease itself may be due to the fungus referred to by Mr. Fraser in his paper on "The Enemies of the Apple and Pear," as Nectria ditissima—it is so stated in De Bary's book on fungi, Oxford, 1887, on the authority of two German naturalists, R. Hartig and R. Goethe—but while it would be absurd without sufficient reason to question the conclusions of such distinguished authorities, there need be less hesitation in expressing a doubt as to the relation of Acari to this disease. Some of these little arachnoids, notably the red spider, are the most troublesome pests with which the gardener has to contend, but others are not enemies. The scarlet mite (Trombidium holosericeum), to which I suppose "J. R. S. C." refers, being carnivorous is probably beneficial, and has about as much to do with canker as its much-abused relative has with the disease of the Eucharis.

Our knowledge of the animal and vegetable parasites affecting plants is yet in its infancy, and the injury done by them is, I believe, increasing. Patient observation may in time enable us to work out the life history of these terrible pests and discover means of averting their attacks. In the meantime we cannot do better than encourage healthy growth. It is patent to the most careless observer that both animals and plants when well nourished are not so subject to the attacks of parasites as those in ill condition. Topical applications of insecticides and germicides may give temporary relief, but the good gardener has occasion to use them but rarely.—Edmund Tonks.

I have read all the articles in the Journal on this subject with interest, and I did not intend to intrude with any remarks until I noticed my name mentioned by your correspondent, "J. R. S. C." I am very pleased to see that the subject has received so much attention at the late Conference. It would be presumption on my part to follow these scientific papers with my poor abilities. A member of our Amateur Gardeners' Society was once asked to give a paper on a subject with which it was known he was familiar as a practical grower, and his answer was that he could not, and in his simple and unaffected way said he knew nothing about it, "only from experience." Another was asked to give us his experience on "bulb-growing," especially Hyacinths, as he was well known to have been a successful grower. His reply was, I can give it in a few words, it was to this effect, "Fill your pot three parts full of soil, place your bulb on it, and then fill up with soil, and water occasionally." My experience of canker and its cure remains so far about as short. If I get rid of the live stock or acari my trees remain healthy, notwithstanding the soil, climate, weather, drainage, and bad sorts for cankering, including Wellington and Ribston Pippin. I should like to see a piece of the cankered wood referred to on page 407, "and others near cankered with no insects upon them." I am afraid I am too much like Thomas of old.—J. Hiam.

ROYAL HORTICULTURAL SOCIETY.

The usual fortnightly Committee meetings were held in the Drill Hall, Westminster, on November 13th, but the duties of the Committee were extremely light. One side of the large hall sufficed for the exhibits.

Fruit Committee.—H. J. Veitch, Esq., in the chair. Present: Messrs. Crowley, Cummins, Blackmore, Willard, J. Smith, Denning, Cheal, P. Barr, and Marshall. Mr. E. H. Woodall, St. Michael's House, Scarborough, exhibited a dish of Grapes under the name of Mrs. Clarke, described as a seedling from Gros Colman and as ripening earlier and colouring more freely than the parent. The bunch sent was small and not well coloured. A seedling Apple unnamed and undescribed was shown by Mr. Kent, Denver, Downham Market. Mr. W. Roupell, Harvey Lodge, Roupell Park, London, S.W., staged a collection of fifty-seven varieties of Apples, comprising good examples of Peasgood's Nonesuch, The Queen, Ecklinville Seedling, Stirling Castle, and Loddington. A bronze Banksian medal was awarded. He also showed a basket of Pears, comprising two fruits of Pitmaston Duchess weighing respectively 16 and 15 ozs. from trees grown in pots out of doors; two fruits of Baltet Père and Louise Bonne, both from trees on the Quince stock, were also exhibited. A. Lane, Esq., Mileham, Leigham Court Road, Streatham (gardener, Mr. Thornton), also exhibited a collection of Apples. A collection of Onions came from the Society's garden, also a dish of Stachys tuberifera, and a few examples of Beetroot. Mr. Willard, The Gardens, Holly Lodge, Highgate, exhibited specimens of a new vegetable described as Asparagus Chicory, and stated to be suitable

as blanchiug for salad or eooking green as a vegetable. Mr. Tozer, Leamington, had a dish of a seedling Potato. A first-class certificate was awarded to Messrs. Carter & Co. for tubers of Stachys tuberifera, cooked specimens also beiug sent. These somewhat resemble Artichokes in flavour, and with the proper accessories would be by no means bad. A certificate was also awarded to Onion Southport Red Globe. This was exhibited in the collection from Chiswick referred to above, and was under trial for Messrs. Veitch & Sons. It is a globe-shaped variety, of medium size, and very highly coloured.

Floral Committee.—G. F. Wilson, Esq., iu the chair. Present: —Messrs. J. Laing, Wynne, Dominy, Pollett, O'Brien, Walker, Duffield, Herbst, Noble, Pilcher, Ballantine and Wilks.

Messrs. James Veitch & Sons exhibited a box of hybrid greenhouse Rhododendrons, for which a vote of thanks was awarded. The most noticeable of the varieties was Primrose, a beautiful canary coloured bloom of admirable form; it is a seedling from Teysmauni. A form of the multicolor type named Hippolyte was also noteworthy. The truss, which is of close and handsome form, bore sixteen flowers of a rich scarlet crimson hue. The other varieties comprised hybrids of the javanicum group. Mr. Herrin, The Gardens, Dropmore, Maidenhead, exhibited a pair of fine cones of Pinus Lambertiana, for which he was accorded a vote of thanks. A. H. Smee, Esq., The Grange, Hackbridge (gardener, Mr. Cummins) exhibited Disa cœlestis (? graminifolia), and R. D. Knox, Esq., Caversham, Reading (gardener, Mr. Lawrence), showed Oncidium cornigerum. Mr. Herriu showed some Chrysanthemum blooms with smaller clustering around them, under the name of "Hen and Chickens."

A fine group of Cyclamens came from Mr. Warren, Worton Gardens, Isleworth, and a silver Banksian medal was deservedly awarded. The plants numbered upwards of 200, and formed a pleasant feature of an otherwise dull gathering. The plants were healthy and well flowered. First-class certificates were awarded to the following:—

Chrysanthemum Mr. Garnar.—This was exhibited by Mr. Stevens, of Putney, and has been several times previously honoured and described. It is a Japanese of a bronzy yellow hue, with narrow fluted florets.

Chrysanthemum Avalanche.—This was also shown by Mr. Stevens, and is illustrated and described in another column. The blooms shown on the present occasion were distinguished by the breadth of floret and singular purity of hue which are the characteristics of this charming variety. The blooms, however, were small.

Lælia Victoria.—This was exhibited by Baron Schröder, The Dell, Egham (gardener, Mr. Ballantyne), and is a hybrid between L. crispa and L. Domini. The flower resembles L. crispa in the petals and sepals, and is deliciously fragrant. The sepals are much recurved, and give the flower somewhat too light an appearance, but the lip was magnificent, being deeply coloured with rich rosy purple from the tip to the throat. This grand variety aroused considerable interest amongst the orchidists present.

SPECIAL MEETING.

Subsequent to the Committee meetings at the Drill Hall a special meeting of the Fellows and the public was held at the Council rooms, 111, Victoria Street, Westminster, to consider the question of where to hold the meetings of the Society in the future. The chair was taken by the Rev. W. Wilks. Dr. Masters was of opinion that much more might be done with Chiswick, and in this he was supported by Mr. Shirley Hibberd. Subsequently Dr. Masters proposed the following resolution: "That the Council be requested to hold a certain number of meetings in the summer and autumn at Chiswick." This was supported by Mr. Hibberd, and carried with one dissentient. The Chairman stated that those who were unable to attend the meeting had been invited to state their views in writing, with a view to their consideration by the Council. Amongst those who had acted upon this suggestion were Messrs. Ware, Cannell, Cypher, Rumsey, Miles, Ryder, Mayer, Barnes, Crowley, W. S. Walker, Henwood, Arbuthnot, Pragnell, Phillips, Baines, Dean, Sutton, Ross, Holmes, Wright, &c. The general opinion appeared to be that Chiswick would not be a suitable place to hold the exhibitions of the Society, being less easily accessible than a central place in London. Several spoke in favour of a fewer number of exhibitions, and Mr. Cheal suggested that they should be divided between London and Chiswick. Messrs. Bunyard and Pearson expressed a hope that a later hour could be selected for the meetings of the Committee. Mr. G. Paul said that he did not consider the Drill Hall a failure, there had been larger attendance there than at South Kensington before the Great Exhibition years. Speaking as a tradesman he had found it to answer well. Opinions as to the suitability of the Drill Hall were then invited by the Chairman, and after some discussion it was proposed by Mr. May and seconded by Mr. Bunyard that the Council be advised to retain the Drill Hall for another twelve months, and on a show of hands being taken this was declared carried by a majority of twenty to four. The proceedings then terminated.

HORTICULTURE IN MALTA.

The "Kew Bulletin" for the current month continues the interesting reports on colonial fruit. Amongst them are the following notes on Malta and its wild fruits, an elaborate account of the cultivated fruits in the island, extending over six pages, being added.

The inquiry into the fruits of Malta was entrusted by the Government to a special board. For this board the following exhaustive report has been prepared by Professor Gavino Gulia, M.D., Director of the Botanic Gardens:—

The Maltese islands have been from time immemorial celebrated for their fertility. The spikes of corn on ancient Maltese coins denote the fecundity of Malta, the agricultural produce of which has often been praised by Roman writers. Rich and very productive plantations which covered this country were destroyed by the Saracens who took possession of these islands (A.D. 870—1090). It was in the fifteenth century that our countrymen began to repair the great damage thus caused by these enemies of Christendom and civilisation. Unluckily, afterwards the cultivation of Cotton and Wheat, and in modern times that of Potatoes, which to our husbandmen seemed more profitable, was the cause of their putting aside the planting of trees. The extensive plantations were no more cared for, the trees were felled for timber to make room for other economic products, a fact which is greatly to be regretted, for, owing to its excellent climate and fertile soil, trees and shrubs of different kinds grow in Malta wonderfully and produce fruit, which being of an exquisite sort, would well repay exportation. It is desirable that the Agrarian Society of Malta and the wealthy proprietors of lands should do their utmost to have these islands once more covered with productive plantations, giving preference to the Olive, the Almond, the Vine, and Orange trees.

The long-felt need of water supply in rural districts has lately, fortunately, been a subject of careful research. The water supply of these islands is derived from rainfall, part of which is directly absorbed by plants, part is re-evaporated, part runs into the sea through numerous ravines, and part sinks into the soil and occupies natural reservoirs, or runs between the strata that form the geological structure of the Maltese group. By digging deep wells a considerable amount of water has already been obtained. By the laws lately enacted our ground tillers will no more depend simply on the rainfall, as a reasonable supply of water will be pretty equally distributed to all parts of the island. In a place like Malta, subject to droughts from periodical want of rain, tanks are indispensable to the agriculturist; it would therefore be advisable to force, by law, landlords to dig a tank in each field, the dimensions of which to be proportionate to the extension of the field itself. With the view of encouraging agriculture, prizes for the best plantations should be awarded to farmers; and whilst an easy way of obtaining young trees is afforded them, the expense of obtaining water for irrigation should be as moderate as possible.

The art of manuring is very little understood by our farmer, who chiefly uses rotten animal and vegetable manures after having exhaled their best constituent parts whilst lying in a corner of his field. He knows nothing of liquid manure, "which," as Professor Lindley remarks, "works the wonder, and operates like the overflow of the Nile or the Indus." The large quantity of nightsoil, which is now lost in the sea, would become a most valuable manure to our gardeners were they taught how to employ it properly. Owing to the unchanging habits of our country people, the Maltese farmer does not differ greatly from his ancestors. Very little, if any, novelty has been introduced into the old farming customs of Malta. Owing to the want of sound knowledge of horticulture and of proper agricultural implements, the work of our farmers is laborious, tedious, expensive, and often unsuccessful. As a modern writer remarks, "Farming in Malta and Gozo is a battle and victory of labour. The 144 square miles comprised within the insular area are partly barren rock and in many respects a geographical riddle. Cultivation has asserted its sway over 54,716 acres, the remainder being sterile rocks." It is to be hoped that a large portion of the waste open spaces some day or other will be brought under cultivation, that the primitive implements of agriculture still in use will be superseded by proper machinery suitable for our soil, and that, as books for our farmers are useless, lectures on horticulture will be given them in each casal, with the view of teaching them how to improve their old methods of cultivation and lead them to the discovery of better modes. It would be then possible to introduce and largely cultivate many exotic trees and shrubs, bearing excellent fruit both for the home market and for exportation; and to improve at the same time the products of those species which are now more or less successfully grown.

Wild Fruits.—Under this term we include the Rubus discolor, or common Bramble, called Ghollick by the Maltese, plentiful both in Malta and Gozo. The small acid drupes are grateful to most palates. Our ancestors used to make of them jams, tarts, and a syrup which, being sub-acid and cooling, was recommended to allay the heat and thirst of patients suffering from fever. The Fig tree, Ficus carica (tin salvagg), is also a native of these islands. The wild variety produces small and delicate fruits. As many varieties of this tree have been introduced to Malta from abroad, we do not proper to include them among the cultivated species. Of the Olive, the wild variety of which is also a native of these islands, we shall speak hereafter, and also of the Pear, a variety of which grows wild in several gullies of Malta. Also indigenous is the Azarole Hawthorn, Cratægus azarolus, called Ghanzalor by the Maltese, the fruit of which, yellow or red, has an agreeable taste, and is by some much esteemed for making tarts. The fruit of the common Hawthorn, Cratægus monogyna, is very small, and only eaten by children and birds. It is known under the name of Zgharun. The Mespilus germanica, which used to abound in several ravines, especially in the neighbourhood of the Boschetto, belongs now only to the flora of Gozo, where it grows seemingly wild among bushes. It is called Pomm el lip. The fruit of the wild variety is middle-sized and worthless. The Medlar is cultivated in some gardens, where it produces a fruit which, like that of the Sorbus domestica, is eaten in a state of incipient decay.

Punica Granatum and Ceratoni asiliqua belong to the flora of these islands, so does Olea europæa.

We think that Ceratonia should be more extensively cultivated for the sake of the abundant Carobs it produces, called Harrub, which are eaten by the poorer classes, especially in times of dearth, and form a nourishing food for all kinds of cattle. A very considerable quantity is consumed yearly by horses. It is, therefore, largely imported from Sicily and Cyprus, the quantity of pods produced in Malta being insufficient for this purpose. The Malta Carobs are sold from 2s. 6d. to 5s. per cwt. The Carob tree does not require any particular culture: it is slow in growing and lives for many ages, especially if care be taken to screen it from the cold northern winds which visit us during winter, by planting the young trees on the northern sides of the ravines.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A MEETING of the above Association was held in the Balloon Room, Royal Aquarium, on Thursday last, November 8th, to discuss the subject of railway rates in relation to fruit transit. Mr. T. F. Rivers took the chair at 5 P.M., and amongst those present were Mr. W. Roupell, Brixton; Mr. Albert Bath, Sevenoaks; Mr. J. Laing, Forest Hill; Mr. R. Ivatt, Cambridge; Mr. R. Dean, Ealing; Mr. J. Cheal, Crawley: Mr. C. J. Goldsmith, Beckenham; Mr. E. Butts, Streatham; Mr. A Dean, Bedfont; and the Hon. Secs., Messrs. L. Castle and W. Earley. In the course of a few introductory remarks the Chairman said—I have to congratulate this Association on the very encouraging success which has attended its formation. We have received greater support and sympathy than we expected, and I think we may say that the Association has become an established fact. We have succeeded in drawing public attention to the necessity of thoroughly examining the possible outcome of the decadence of industrial fruit-growing in this country, and I hope of arresting the serious loss which would undoubtedly occur if measures were not taken to arrest such loss before the evil had gone too far to mend. This Association will not have been formed in vain if it can succeed in attracting the serious attention of cultivators to the best means and methods by which the country can hold its own in the competition with which it is threatened, and the objects of our Society are to obtain the best possible information from fruit growers in different parts of the country, and to distribute this information as widely as possible. With this end in view we propose in the ensuing year to hold meetings in the provincial districts to invite the co-operation of all who are willing to help us in the good work by reading papers and assembling to discuss matters which are of vital importance to the particular industry. Our meetings will be held on the understanding that they will be entirely non-political, and this salutary abstinence will, I hope, meet with the hearty approval of all who join us. We intend to deal with matters of important interest in a thoroughly impartial spirit. One of the important points is the cost of the conveyance of fruit, and we shall be glad if we can, by obtaining information, enable growers, handicapped by distance from the centres of distribution, to compete with those more happily situated. We trust that we shall be able to obtain by reports from competent persons sufficient knowledge on this head to submit our case to the Board of Trade. We are not accustomed in England to make a grievance, but to examine and endeavour to remove an existing one. In this particular case there are good grounds for believing that the cost of the transport of fruit is much greater than it need be, and that this cost pressess heavily on one of our native industries. There can, however, be no doubt that the question will be fairly dealt with. I must remind those who make the reports that the facts must be accurate, and that a case which is to be submitted to the Board of Trade must be very clear and distinct.

We also hope by inquiry and discussion to raise the standard of quality of fruits sent to market, and as planting is likely to be carried on for some years on a more extensive scale than has hitherto been known, any information as to the relative value of sorts in different districts will be of very great importance to the planter, and it will, I hope, be one of the aims and objects of the Society to classify and determine as far as possible the suitability of sorts of fruits to different localities; the fewer sorts the better, both for the fruit tree grower and the planter. It is, I think, known to many that a very decided liking is exhibited by certain fruits to particular districts. I may instance the Winesour Plum in Yorkshire, the Apple orchards of Herefordshire and Devonshire, the Bullaces of East Anglia, and in my own district the singular success of the Early Prolific Plum. A Society which can visit the different fruit-growing districts will be able to gather more facts than a Society which is fixed permanently in any one locality, and will, I imagine, much extend its sphere of usefulness.

Several letters were read from members of the Association and others interested in the subject, and it appeared that those who lived sufficiently near all sent their fruit by road as cheaper and safer, one stating that it would be to his interest if all the railway rates were increased. The majority, however, at a distance from towns condemned the present charges strongly. Mr. Watkins of Hereford remarking that the present rates are amongst the greatest hindrances to the extension of fruit cultivation. Mr. J. Udale, Tamworth, wrote—"Railway rates for the transit of fruit and vegetables under some circumstances are quite prohibitive. Twelve months ago I was in the habit of sending all classes of fruit to two fruiterers in Birmingham. Choice fruit was sent by passenger train, coarse fruit and vegetables by goods train, thinking it would be much cheaper. However, after one or two consignments had been delivered at the ordinary goods rate, I received notice from my customer—whom I have known for many years, and is a strictly honest and truthful man—that the railway company had a higher tariff for fruit and vegetables, and that they demanded extra payment of either 1s. 3d. or 1s. 6d. on previous payments for the same weight of the same class of goods in the same hamper. This additional charge, in conjunction with a rate upon returned empties, caused me to cease sending such goods to Birmingham, and I dispose of them nearer home. This excessive charge by the railway company causes a direct loss to four classes of the community:—First, the grower; second, the railway companies themselves; third, the fruiterer; fourth, the public. My experience is, that the railway rates are prohibitive of the rapid transport and wider distribution of all classes of garden produce except fruit and flowers of the highest quality, beyond a distance of twenty miles; and I have long been of opinion that the time had come when it was desirable that growers should combine for the purposes of dealing with railway rates, selecting the most suitable markets, and disposing of their own produce, if possible, direct to the consumer."

From Mr. W. E. Bear a suggestive letter was received in which he said—"I am sorry that I have too much in hand for the next fortnight to help your useful Association by preparing and reading a paper on railway rates. It seems to me that the only really important thing for your Association to do in this connection, is to form a Parliamentary Committee, and to get the Association recognised as a body entitled to be represented before the Board of Trade. All members who have real grievances should send details to the Committee, and those that prove on examination to be valid should be brought before the Board of Trade. It is of no use to read a paper showing that rates on fruit are too high; everybody knows that. The time has come to get such rates reduced."

Mr. Albert Bath said he was not prepared to treat the subject fully, but he had made some careful comparisons between the rates per ton for fruit conveyed by rail from different stations at an equal distance from London, and he showed by a series of figures the extraordinary disproportion that existed on some lines. He contended that a system of equalisation was needed in the interest of growers who had to send their fruit long distances.

Mr. R. Dean followed with some facts and figures relating to the irregularities of railway charges, showing how the foreign preferential rates press very heavily on the home producer, the difference in a railway rate often meaning the whole of the profit. It was stated that English Potatoes and fruit cost 23s. 4d. per ton to bring from Selling to London, yet foreign produce of the same character were brought to London viâ Selling for 20s. per ton.

Mr. R. Ivatt, Mr. J. Cheal, and Mr. A. Dean also gave many statements of a similar character, but Mr. Figgures of the Railway Clearing Office remarked that the railway companies were mostly willing to make any reasonable concessions, and that there was a danger if rates were much decreased it would have a tendency to flood some markets, with a consequent reduction in prices to the producers. He thought the best plan was to encourage people to send their goods to the nearest markets. In the course of a prolonged discussion many interesting and important facts were elicited, and the business of the meeting was concluded by a resolution, proposed by Mr. Ivatt and seconded by Mr. Roupell, to the effect "that the Executive Committee of the British Fruit Growers' Association be requested to collect all available information on the subject of railway rates in fruit transit and distribution, to enter into communication for this object with the Railway and Canal Traders' Association, and to submit the results in the form of a report at the earliest convenient meeting."



THE CHRYSANTHEMUM CENTENARY.

As the result of a letter sent by Mr. W. Holmes to one of the daily papers, some comments upon which have already appeared in this Journal, a meeting of the Judges at the Crystal Palace Chrysanthemum Show was by permission of the Secretary, Mr. Gardiner, held in the Board Room on Friday afternoon last. Mr. E. Sanderson occupied the chair, those present being Messrs. W. Holmes, R. Ballantine, J. Laing, J. Douglas, G. Gordon, J. Douglas, L. Castle, R. Dean, and W. G. Head. After some discussion respecting the desirability of celebrating the centenary, concerning which there was not the slightest difference of opinion, it was proposed by Mr. Laing and seconded by Mr. Earley—"That considering the year 1889 is the centenary of the introduction of the Chinese Chrysanthemum into Europe, it is advisable that the National Chrysanthemum Society be requested to prepare a scheme for the proper celebration of the event." This was adopted unanimously, and several suggestions were made as to the best way in which such a celebration could be best effected, one point being strongly pressed—*i.e.*, that it was desirable as large a collection of plants as possible should be grown with a view to their careful comparison and the determination of synonyms and the correction of nomenclature.

JAPANESE CHRYSANTHEMUM AVALANCHE.

THIS remarkably handsome pure white Japanese variety was brought into notice by Messrs. H. Cannell & Sons, Swanley, last year. Mr. E. Molyneux secured plants, and some of the finest blooms yet shown have been from the Swanmore Park garden, one of these being represented in the illustration (fig. 51). That its merits quickly became recognised by cultivators is proved by the fact that it obtained a place in the National Society's catalogue select list. The blooms are pure white, large, full and rounded, the florets very substantial, straight, or slightly drooping in mature blooms, some being split at the edges. The finest bloom we have seen was that from Mr. E. Molyneux, certificated at Southampton on the 1st inst., this being 7 inches in diameter and 5 inches deep. It has also been certificated at several other shows, including Kingston and the Crystal Palace, the bloom at the last named place being exhibited by Mr. Packman. As an exhibition variety it will undoubtedly take a high place, as the samples shown this year will be sufficient inducement to many growers to undertake its culture. Most of the varieties Messrs. H. Cannell & Sons sent out last year have obtained a good position on the boards, but that best and most frequently shown is Edwin Molyneux, which, in the tabulated lists and analysis, may be expected to take the foremost position amongst the recent introductions.

CHRYSANTHEMUM PRINCESS OF WALES.

THE voting as tabulated on page 10 of the National Society's catalogue places this very fine variety in a not very favourable position. There are eight places in a list of thirty-six varieties which are so arranged that those which received an equal number of votes are bracketed together. Ten varieties occupy the second position in the list, whereas Princess of Wales is bracketed with three others only, and these only moderate companions, one of them particularly so—Venus. Seldom indeed is a good or even a moderate bloom of this variety staged, as good blooms go nowadays, while Princess of Wales is by many regarded



FIG. 51.—CHRYSANTHEMUM AVALANCHE.

as having few equals and less superiors. Take for another instance Prince of Wales, which I regard as quite an inferior variety, as it lacks the most important points in an incurved bloom—depth and solidity. Seldom indeed is this variety seen with a full centre; generally the petals are thin and loose, the bloom altogether flat. Still the Prince stands before his royal consort in position in the voted list. The only reason I can assign for the adverse position of this favourite, and one which it does not deserve, is that generally it is not well cultivated owing to no fault of its own. For this reason it gets the character of not being one of the best, whereas under the best treatment it has been able to hold its own against all comers. Only once has it been my lot to see six blooms of any other sort capable of surpassing the Princess. The superior stand in this case was Lord Alcester. One fault which Princess of Wales possesses is that of being shy in producing cuttings early. In this manner valuable time is lost in the growth of the plants, which can never be made up by any kind of treatment. The variety is then often neglected by the ordinary cultivator. I fancy a leading exhibitor would think he was but badly off if a bloom of Princess of Wales was not forthcoming for a stand of blooms in an important class, certainly would it be regarded by such exhibitors and the judges as possessing more merit than either Mr. Bunn or Baron Beust for instance. Growers of Incurved Chrysanthemums know well the value of such sorts as Princess of Wales in close competition.

Taking into consideration also the list of forty-eight Japanese varieties which are classed into thirteen divisions, which are bracketed together according to the number of votes obtained, Madame C. Audiguier in my opinion is entitled to rank quite at the head of the list; certainly it is more meritorious than M. Tarin, Balmoreau, Comte de Germiny, or even Baronne de Prailly. As far as I know this variety has only one fault, that of extremely tall growth, making it unpopular with those who have not the necessary convenience of accommodation.—E Molyneux.

WHAT CAUSES "DAMPING-OFF" IN CHRYSANTHEMUM BLOOMS?

This is a question of considerable importance among the exhibition growers in several parts of Ireland, as pointed out by Thomas Phelan, Esq., of Spring Gardens, recently. I have seen many of the collections—I am now referring to those grown for large exhibition blooms—and none are safe. I may at once say those grown for decoration or for trial—including the newer introductions, such as Avalanche, White Cérès, James Carter, Mrs. Beale, Ralph Brocklebank, Alice Bird, Elsie, Lady Lawrence, Mrs. H. Cannell, Edouard Audiguier, Mrs. J. Wright, and Amy Furze—are, with me, quite free from damp; while 300, the majority being Japanese, against a partially protected south wall, are equally so. Those grown for large exhibition blooms are then alone to be considered; so this narrows the subject.

Mr. Phelan is among the best amateur exhibition growers in Ireland, and in last issue he attributes this general damping-off in this locality to the effect of the cool wet summer and consequent insufficient ripening of the foliage and wood, and that they are now surcharged with sap. This is probably right as far as it goes, but from careful examination and thinking the matter over I think constant feeding with stimulants under those circumstances is the real cause. For maturation purposes the amount of sunshine last summer has been estimated at 30 per cent. less than in the previous year. As this is the great agent for the elaboration of the sap and the process of ripening, the deficiency was a third less. It is this, too, that has thrown back the time of blooming from ten days to a fortnight. Feeding plants with stimulants then, when they must have had a difficulty in assimilating what was already fit for absorption, partly from the constant rains, was, and must have been at times, a work of supererogation. I respectfully submit then—but will duly defer to the opinions of Messrs. J. Wright, Lewis Castle, or E. Molyneux for instance—that if we are to have another comparatively sunless and moist summer the use of stimulants, if any, must be greatly curtailed and only given where the pots are comparatively small and as the ripening and building up of the tissues proceed. One word as to small pots. I was kindly shown through the Duke of Buccleuch's collection of some 2000 Chrysanthemums at Dalkeith Palace Gardens last September by Mr. Malcolm Dunn and his intelligent foreman, Mr. Brough. The plants were in pots ranging from 5½ to 8 inches, none larger, but regularly fed with a variety of stimulating liquids as they required it. Finer and healthier plants I never saw, with in every instance foliage to the rims of the pots. A party of Yorkshire gardeners were admiring them the day before. This set me thinking as to the necessity of 10 or 12-inch pots when stimulants are regularly administered; but the matter only indirectly bears on the above query. —W. J. Murphy, *Clonmel.*

CHRYSANTHEMUMS AT FROYLE PARK, ALTON, HANTS.

At the gardens of T. Oliverson, Esq., under the superintendence of Mr. H. Coster, Chrysanthemums have for several years constituted an important specialty, and Mr. Coster has this season excelled all his former efforts to produce good plants and blooms. And Mr. Coster attributes much of his success to his employer allowing him the necessary facilities required to produce such grand plants and blooms. There are 600 plants grown for large blooms, chiefly from crown buds, and the majority of the blooms are fit for exhibition. At the present time there is a grand display in the conservatory; about 500 plants are arranged in one group, all the pots standing on the level ranging from 3 to 10 feet in height. Enumerated are all the recent, new, and approved older varieties, and I must admit never before has it been my privilege to inspect such a magnificent display in a private establishment. Japanese, incurves, and reflexed are well represented both in colour and varieties. They are remarkable for their purity, cleanness, and solidity. Noticeable among the Japanese are Stanstead White, M. Freeman, Sarah Owen, Florence Percy, Avalanche, Soleil Levant, Marguerite Marrouch, M. J. Laing, Moonlight, Madame C. Audiguier, Grandiflorum, J. Délaux, M. Délaux, and Criterion. These are all of great size. Edwin Molyneux and Ralph Brocklebank are just unfolding some very large buds, the former variety looking very promising.

The best of the incurved were Jeanne d'Arc (grand bloom), Lord Wolseley, Lord Alcester, Queen of England, Bronze Queen of England, Empress of India, Golden Empress of India, Prince Alfred, and many others too numerous to mention. The most noticeable among the reflexed was Cullingfordi, Cloth of Gold, King of the Crimsons, Christine, and Golden Christine. Another conspicuous feature at Froyle Park is a large quantity of Poinsettia pulcherrima with its brilliant colouring of scarlet bracts of large dimension.—Visitor.

FLORA OF THE KERMADEC ISLANDS.

Upwards of thirty years ago Sir Joseph Hooker published an account of the botany of Raoul or Sunday Island, one of the Kermadec Group (Journal of the Linnæan Society, i., pp. 125-29), founded upon a small collection made by McGillivray and Milne, naturalists attached to H.M.S. "Herald." This collection consisted of forty-two species, of which twenty were flowering plants, and the rest Ferns and Lycopods; and the most interesting circumstance connected with it was "the identity of most of the flowering plants, and all but one of the Ferns, with those of New Zealand."

In 1815, Mr. J. T. Arundel presented to the Kew Herbarium a collection of fourteen species from Meyer, a small rocky islet about a mile and a half north of Sunday Island. Poor as it was, it contained half a dozen plants not previously known from the group, though they are all included in the collection referred to below.

Since then, no further light has been thrown on this insular flora until the quite recent appearance (Transactions of the New Zealand Institute, xx., pp. 151-81) of a paper by Mr. T. F. Cheeseman, Curator of the Auckland Museum, New Zealand, a copy of which was kindly forwarded to the writer. Mr. Cheeseman was permitted, through the kind offices of Mr. Percy Smith, the Assistant Surveyor-General of New Zealand, to accompany the expedition despatched last year for the purpose of formally annexing the group to the colony of New Zealand. If Mr. Cheeseman has not succeeded in exhausting the botany of the Kermadec Islands, which, of course, is hardly probable, the undiscovered species cannot materially affect the question of the origin of the vegetation. But before giving the results of his investigations it will be useful to indicate the position and extent of the islands.

A short note was recently given on the subject, but the following further particulars are interesting.

The information obtained points unmistakeably to New Zealand as the source of the greater part of the flora of the Kermadec Islands. How the plants reached these islands is an interesting question. Mr. Cheeseman is prepared to admit a former north-western extension of New Zealand; but, after a careful examination of the evidence, he arrives at the conclusion that the Kermadec Islands have always been isolated, or, at least, have not formed part of any other land since the Secondary period. Spores of the Ferns may have been conveyed by winds; and ocean currents and birds it may well be conceived have operated in stocking the islands with flowering plants. Most of the birds are New Zealand species, and the presence of Kauri logs, of different dates and brands, stranded on various parts of the beach, is convincing evidence of the direction of ocean currents. Moreover, the composition of the flora strongly supports this theory.

Sunday Island is the only one of the group on which there is anything approaching arboreous vegetation, and this, with the exception of a small area of the crater, is clothed with forest from the seashore to the tops of the highest peaks. The prevailing tree is Metrosideros polymorpha, one of the most characteristic trees of Polynesia, especially of the smaller islands, reaching the Sandwich, Marquesas, and Pitcairn Islands; but this particular species does not occur in New Zealand nor in Australia.

Next to the Metrosideros in abundance and conspicuousness is a Palm, which Mr. Cheeseman thinks may be identical with the Norfolk Island Rhopalostylis Baueri (Areca Baueri). In some places this grows gregariously, forming large groves.

Ferns are everywhere abundant, varied, and luxuriant; and the endemic Tree Fern, Cyathea Milnei, is very plentiful, and handsome withal, rising to a height of 50 or 60 feet. Prominent among the New Zealand trees are Corynocarpus lævigatus, Myoporum lætum, Melicope ternata, Melicytus ramiflorus, and Panax arboreum. Cordyline terminale, the widely-spread Polynesian "Ti," and Pisonia Brunoniana, Pittosporum crassifolium, Coprosma acutifolia, and C. petiolata, natives of New Zealand, are other elements deserving of notice.

The herbaceous vegetation includes no plants with conspicuous flowers, but there are two Orchids—namely, Aeianthus Sinclairii, a native of New Zealand, and Microtis porrifolia, which also inhabits both New Zealand and Australia. Macaulay Island was entirely covered with a beautiful sward of natural grass, supposed to be composed of a species of Poa and an Agrostis, but in the absence of flowers they were in-

determinable. Students of botanical geography will find much more that is interesting in Mr. Cheeseman's valuable paper, from which I have extracted the principal facts.—W. B. H. (in *Nature*).

CHRYSANTHEMUM SHOWS.

THE NATIONAL SOCIETY'S SHOW.—November 7th and 8th.

Last week we were compelled to dismiss the great Show at the Royal Aquarium, Westminster, in a very brief report, and in returning to it now we can only give some additional particulars concerning the varieties shown in the first prize collections, and a general review of the Show. That it was an exceedingly satisfactory exhibition may be judged from the large increase in the number of entries (504), the space occupied, the good quality of the blooms throughout, and the great attendance of visitors (over 10,000 on the first day alone). What such a show would have been arranged in one large building can be readily imagined. Much of the effect was, however, necessarily spoiled by the exhibits being unavoidably separated and distributed throughout the main building in the side galleries and St. Stephen's Hall.

It was not only an exhibition of Chrysanthemums, but the display of vegetables and fruit in competition and otherwise would alone have formed a show of no mean importance, while in addition there were horticultural sundries, greenhouses, and appliances in strong force. With regard to the latter a very judicious system was adopted of charging for the space occupied, and many societies might follow this out with advantage to themselves.

The Societies' challenge trophy for forty-eight cut blooms, twenty-four incurved, in not less than eighteen varieties, and twenty-four Japanese, distinct, was, as we stated last week, won by the Weald of Kent Society, represented by Mr. Doughty, Angley Park Gardens, Cranbrook, with the following varieties in excellent condition, the flowers substantial and clean :—Incurved, back row—Lord Alcester, Alfred Salter, Empress of India, Emily Dale, Lord Alcester, Alfred Salter, Empress of India, and Queen of England ; middle row—Bronze Queen, Golden Empress, Prince Alfred, Mrs. Healc, Prince Alfred, Golden Empress, Lord Wolseley, and Jeanne d'Arc ; front row—Mrs. W. Shipman, Hero of Stoke Newington, Jeanne d'Arc, Empress Eugénie, Prince of Wales, Violet Tomlin, Jardin des Plantes, and Lady Hardinge. The Japanese were similarly good, the varieties being, in the back row, Baronne de Prailly, Fair Maid of Guernsey, Edwin Molyneux, Madame B. Rendatler, Val d'Andorre, Boule d'Or, and Madame Baeo ; middle row—M. Astorg, Carew Underwood, Hiver Fleuri, Belle Paule, Madame Paul Detour, Dormillon, Madlle. Lacroix, and Madame C. Audiguier ; front row, Comte de Germiny, Grandiflorum, Madame de Sevin, Meg Merrilies, Criterion, Dr. Macary, Triomphe de la rue des Châlets, and Peter the Great.

In another large class, that for forty-eight incurved, not less than twenty-four varieties or more than three blooms of one variety, Mr. Doughty was also the premier exhibitor, staging grand examples of the following, arranged in the order named :—Back row—Lord Alcester, Alfred Salter, Empress of India, Lord Wolseley, Golden Empress, Prince Alfred, Emily Dale, Alfred Salter. Lord Alcester, Bronze Queen, Golden Empress, Lord Wolseley, Emily Dale, Prince Alfred, Lord Alcester, and Alfred Salter. Middle row—Princess of Wales, Jeanne d'Arc, Prince Alfred, Queen of England, Violet Tomlin, Empress of India, Mrs. W. Shipman, Golden Empress of India, Empress Eugénie, Queen of England, Violet Tomlin, Jeanne d'Arc, Princess of Wales, Empress of India, Empress Eugénie, and Queen of England. Front row—White Venus, Lady Hardinge, Jardin des Plantes, Venus, Charles Gibson, Hero of Stoke Newington, Jeanne d'Arc, Antonelli, White Venus, Cherub, Mrs. Norman Davis, Venus, Mrs. Halliburton, Cherub, Jardin des Plantes, and Princess of Wales.

With twenty-four incurved, distinct varieties, Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was awarded premier honours, his stand containing the following varieties, represented by beautifully fresh compact blooms :—Back row—Empress of India, Golden Empress, Lord Wolseley, Queen of England, Lord Alcester, Prince Alfred, Emily Dale, and Alfred Salter. Middle row—John Salter, Jeanne d'Arc, Jardin des Plantes, Beauty, Nil Desperandum, Mr. Bunn, Prince of Wales, and Mr. Brunlees. Front row—Princess Beatrice, Golden Perfection, Venus, Barbara, White Venus, Mrs. Shipman, Prince of Wales, and Lady Hardinge.

The class for forty-eight Japanese blooms, not less than twenty-four varieties, or more than two blooms of one variety, was an extraordinary one, fourteen competitors staging fine blooms, the consideration of which occupied the Judges for over an hour. Ultimately Mr. J. McKenzie, gardener to T. S. W. Cornwallis, Esq., Linton Park, Maidstone, was awarded the premier prize for handsome blooms of the under-mentioned varieties. Back row—Ralph Brocklebank, Comtesse de Beauregarde, Madame B. Pigny, Edwin Molyncux, Meg Merrilies, Carew Underwood, Soleil Levant, Baronne de Prailly, Mrs. J. Wright, Carew Underwood, Soleil Levant, Meg Merrilies, Edwin Molyneux, Madame B. Pigny, and Comtesse de Beauregarde. Middle row—Marguerite Marrouch, Madlle. Lacroix, Madame J. Laing, Thunberg, Madame C. Audiguier, Maiden's Blush, Val d'Andorre, Stanstead White, Val d'Andorre, Mrs. H. Cannell, Madame C. Audiguier, Maiden's Blush, Thunberg, Baronne de Prailly, Madlle. Lacroix, and Marguerite Marrouch. Front row—Florence Percy, Criterion, Elaine, M. Brunet, L'Adorable, Balmoreau, Mrs. H. Cannell, Gloriosum, Belle Paule, L'Adorable, J. Délaux, M. Brunet, Elaine, Madame J. Laing, Florence Percy, and one name we missed. Messrs. Packman and Munro won the second and third prizes.

The best twenty-four Japanese in a class of twelve exhibitors were shown by Mr. C. Cox, gardener to J. Trotter, Esq., Buckenden Grange, Hertford, who had the following varieties. Back row—Album Plenum, Belle Paule, M. Tarin, Meg Merrilies, Madame C. Audiguier, Edwin Molyneux, Soleil Levant, Fair Maid of Guernsey ; middle row—Madame de Sevin, Ralph Brocklebank, Madlle. Lacroix, Thunberg, Carew Underwood, Peter the Great, Comte de Germiny, and Spectre Toulousain ; front row—Snowstorm, Val d'Andorre, Criterion, Hiver Fleuri, Yellow Dragon, La Triomphante, J. Délaux, and M. Astorg.

Mr. T. Skinner, East Surrey Park Gardens, had the leading box of twelve Japanese, and amongst sixteen competitors secured the first prize. He showed capital examples of the following : Madame C. Audiguier, E. Molyneux, Baronne de Prailly, Carew Underwood, Maiden's Blush, Golden Dragon, Madame B. Pigny, J. Delaux, Dormillon, Meg Merrilies, Val d'Andorre, and Edouard Audiguier.

There were ten entries with twelve Japanese reflexed, Mr. J. Hewitt, Hillside House Gardens, Hythe, being first for fine blooms of Val d'Andorre (3), Maiden's Blush (3), Criterion, M. Astorg, L'Adorable, Amy Furze (2), and J. Délaux. Mr. C. Cox had the best stand of twelve reflexed, Mr. Sullivan the finest twelve large Anemones, and Mr. Jukes the best twelve Anemone Japanese, very handsome blooms.

Speeimen plants were well shown by Messrs. J. Brooks, E. Easey, W. Davey, S. Gilbey, F. E. Wright, and R. Cooper. The leading groups came from Messrs. Davis & Jones, J. Hudd, J. Laing & Son, and J. Witty.

In the fruit classes Grapes were excellent, Messrs. A. Luff, C. J. Goldsmith, and G. Duncan taking the prizes for white varieties. Mr. Howe had the best black Grapes, Messrs. Batten and J. Barry following. Mr. Lambert, Shrewsbury, staged the finest Gros Colman, Mr. J. Craven and W. Allan being second and third. Mr. C. J. Goldsmith won the premier award for dessert Apples, and Mr. J. McKenzie for culinary Apples, Mr. Goldsmith also being first for six dishes of Pears.

The competition in the classes for Potatoes, and the special prizes for vegetables offered by Messrs. Sutton & Sons, Webb & Sons, Deverill and Co., and C. Fidler, was very keen. The miscellaneous exhibits also from the principal seed and nursery firms were both abundant and interesting.

BATH.—November 7th and 8th.

This Society, with Alderman Chaffin at its head and Mr. B. Pearson as Secretary, held a highly successful Exhibition on the above date. Although nominally a Chrysanthemum Show fairly good prizes were offered for other plants as well as fruit and vegetables, and in nearly every class the competition was close and the exhibits numerous.

Plants.—The Veitch Memorial medal and £5 were offered as the first prize in the class for eight specimens, distinct, four to be Japanese and four of large flowered varieties, pots not to exceed 12 inches in diameter. Six competed, but two of them far surpassed the rest. The first prize was eventually awarded to Mr. R. B. Cater, who had a very even collection, each plant being flatly trained, about 4 feet through, and carrying on an average seventy good blooms, the foliage also being good ; the varieties Madame Bertie Rendatler, M. Jean Marie Pigny, Source d'Or, Margot, Lord Wolseley, Mrs. Dixon, Prince Alfred, and Mrs. G. Rundle. The Rev. E. Handley (gardener, Mr. S. Kerslake) Bath, was a close second, two plants rather smaller than the rest being the only drawback to the collection. The third prize was awarded to Major W. P. Clarke, Trowbridge. There was a great falling off in the class for four dwarf trained plants, and with these Mr. M. Cole was first, Mr. H. C. Smith second, and the Rev. C. C. Layard third. Mr. Cole was also first for three well flowered standard-trained plants. In a corresponding class for Japanese varieties Mr. S. P. Budd (gardener, Mr. W. Davis), Bath, was well first, and Mr. E. B. Titley second, both had very freely flowered plants. Mr. M. Cole was first for conservatory plants, and Mr. T. Jolly (gardener, Mr. A. Hawkins), Bath, second. Mr. R. B. Cater had the best pyramid large flowered variety, the second prize going to Mr. S. P. Budd. In the class for a flatly trained specimen of large flowered variety Mr. W. J. Brown (gardener, Mr. J. Southard) had a fine plant of Mrs. G. Rundle, fully 6 feet through, and was first, the second prize being awarded to Mr. Cater, who also had a good specimen. There were also classes provided for specimen plants of Pompons and Anemone flowered varieties, but in most instances those staged were much too backward to be attractive. Good prizes were offered for groups of Chrysanthemums to occupy a space 12 feet by 6 feet, and of these there were five arranged. The first prize was rightly awarded to Mr. R. B. Cater. Mr. S. P. Budd followed, the plants in this case being dwarfer, and the blooms were fine and fresh, but the front was decidedly weak. The third prize went to the Rev. E. Handley.

Miscellaneous Plants.—Mr. R. B. Cater was the only competitor with six Orchids, and was awarded the first prize. Of these the most noteworthy were Odontoglossum Sanderianum, Oncidium tigrinum, and Oncidium Rogersi. A freely flowered Lapageria rosea gained Major W. P. Clarke the first prize in the class for one flowering plant. Mr. E. E. Bryant (Mr. W. J. Mould, gardener) being second with Allamanda Hendersoni. The best four fine-foliaged plants were staged by Mr. C. Doherty (gardener, Mr. H. Jones), the second prize going to Mr. R. B. Cater. Mr. A. A. Walters, Bath, was first for six good table plants, and Mr. J. Cray, Frome, second. Bouvardias were not so good as usual ; Mr. W. Pumphrey (gardener, Mr. J. J. Tate) was first, and Messrs. G. Cooling & Sons second. Primulas made quite a fine display,

the raised centre of one long table being closely filled with them. For twelve plants Mr. M. Cole was well first, the second prize going to Mr. C. Fisher. In the next class, that for six plants, Mr. Jerome Mureh was first, and Mr. T. Carr (gardener, Mr. T. Frickle) second; while for double Primulas, Mr. J. Mureh was first and Mrs. Hoare (gardener, Mr. F. Rice) second. There were three collections of plants arranged for effect in a space not less than 12 feet by 4 feet. The Judges had no difficulty in awarding the first prize, Messrs. G. Cooling & Son, Bath, being well ahead of the other competitors. Their arrangement was somewhat formal, but a capital assortment of Ferns, Palms, Crotons, Dracænas, Orchids, and other choice flowering plants was employed. Mr. E. E. Bryant was second, the arrangement in this case not being sufficiently close to well hide the pots. Mr. W. C. Drummond was third.

Cut Flowers.—There were five entries in the class for twenty-four distinct varieties of large flowered Chrysanthemums, and the Judges were a considerable time in making their awards. The first prize was ultimately awarded to Mr. W. M. Baker, (gardener, Mr. J. Aplin), Harefield Court, Gloucester, who had many fine but not particularly well set up blooms. In all probability had judging by points been resorted to, the winner of the second prize, the Earl of Radnor (gardener, Mr. H. W. Ward), Salisbury, would have been placed first, good dressing being apparent throughout the stands of well grown blooms shown by this competitor. His best was Empress of India (this securing the silver medal of the National Chrysanthemum Society, which was offered for the best bloom in the Show). Lord Heytesbury (gardener, Mr. J. Horsefield), Heytesbury, Wilts, took the third prize, and was also first for twelve varieties, these comprising Empress of India, Golden Empress, Lord Wolseley, Queen of England, Jeanne d'Are, Alfred Salter, Golden Queen of England, Nil Desperandum, Jardin des Plantes, Princess Teck, Prince Alfred, and Lady Hardinge, all good. Lord Radnor was a good second, and Mr. A. Cole (gardener, Mr. W. Carpenter), third. Major W. P. Clarke was first for six varieties, Mr. S. P. Budd second, and Mr. M. Hookings third. Japanese varieties were very well shown, a very few points dividing the prizewinners. The first prize for twenty-four varieties was awarded to Mr. Wilfred Thomas (gardener, Mr. Thomas), Taunton, who had fine blooms of Boule d'Or, Madame C. Audiguier, Meg Merrilies, Thunberg, Belle Paule, Carew Underwood, Avalanche, Elaine, M. J. N. Pigny, Soleil Levant, Ralph Brocklebank, and Criterion. Mr. H. W. Ward was second. The third prize was awarded to Captain Alcock (gardener, Mr. A. Parker). Mr. W. Marshall was again first for twelve varieties, and Mr. W. M. Baker was second. Mr. M. Cole was first for six blooms, and Mr. M. Hookings was second. There were comparatively few Anemone-flowered varieties shown. For twelve blooms in not less than six varieties Lord Radnor was placed first, the second prize going to Mr. W. Marshall for what apparently was the better stand of the two.

For a vase or epergne of cut flowers Mr. C. Winstone, Clifton, was first, and Mr. M. Hookings second, both displaying great taste. The first named was also first for a hand bouquet, and Messrs. Garaway and Co., Clifton, second, the former having the more elegant arrangement, and both used very choice flowers.

Fruit and Vegetables.—There was as usual a very fine display of Grapes in the three classes provided for them. The best four bunches in not less than two varieties were staged by Alderman Chaffin (gardener, Mr. W. Taylor), these consisting of Muscat of Alexandria, each of the two bunches weighing upwards of 5 lbs., and were well finished, with these being fairly good Alicante. Mr. T. Jones staged fine Gros Colman and Alicante, and was second; the third prize going to Mr. S. Fox Andrews (gardener, Mr. T. Haste). Mr. Chaffin was also first for three very fine bunches of Muscat of Alexandria; Earl Cowley (gardener, Mr. J. Gibson) being a most creditable second. In the class for any variety of black Grapes, Mrs. Gouldsmith (gardener, Mr. G. Pymm), Trowbridge, was well first with grand bunches of Gros Colman, these being perfect in every respect; Mr. T. Jones was second with very good Alicante. A grand lot of Pears were shown in the several classes provided for them. For six varieties, the first prize was awarded to J. D. Wingfield Digby, Esq. (gardener, Mr. W. G. Pragnell), Sherborne, these consisting of very fine Pitmaston Duchess, Beurré Diel, Marie Louise, Duchesse d'Angoulême, Doyenné du Comice, and Beurré Clairgeau; Mr. E. Hall was second. With four varieties, Mr. C. B. Weaver was first, staging extra good Marie Louise, Doyenné du Comice, Louise Bonne of Jersey, and Pitmaston Duchess; Captain Alcock was a good second, and there were thirteen other lots shown. Mr. C. B. Weaver was also awarded the first prize in a very large class for a single variety fit for the table, winning with extra fine fruit of Prince Imperial, this being another name for Pitmaston Duchess; Mr. C. Fisher was second. Apples were also largely shown. The best six dessert varieties, consisting of Newtown Pippin, Ribston Pippin, Blenheim Pippin, King of the Pippins, Royal George, and Jackson's were staged by Mr. E. Hall; J. D. W. Digby, Esq., being a good second. For four dessert varieties, Mrs. Pinder (Mr. J. Riddick, gardener) was first, and Mr. E. T. Hall second. Kitchen Apples were extra good, the Dorset and Somerset dishes quite eclipsing those sent from Horsham in Sussex. For six varieties, Mr. J. D. W. Digby was first, the collection consisting of very fine dishes of Peasgood's Nonesuch, Cox's Pomona, Ecklinville, Mère de Ménage, Warner's King, and Hawthornden; Mr. W. H. Long, M.P. (Mr. A. Miller, gardener), was a good second. Four competed in the class for six varieties of dessert fruit. The Marquis of Bath (Mr. W. Pratt, gardener), Longleat, was placed first, having beautifully finished Muscat of Alexandria and good Alicante Grapes, Late Admirable Peaches, Coe's Golden Drop Plums, King of the Pippins Apples, and Gansel's Bergamot Pears; Mr. H. W. Tugwell (gardener, Mr. J. Ellicott), Bath, was second, the Lady Downe's and Muscat of Alexandria Grapes being good in this collection. Only one class was provided for vegetables. For a collection to occupy a space 4 feet by 3 feet, Mr. J. D. W. Digby was well first, having extra fine examples of Celery Wright's Grove White, Broccoli Veitch's Autumn Protecting, Tomato Hackwood Park, Brussels Sprouts The Aigburth, Potato Reading Russet, Carrot Veitch's Matchless, Parsnip The Student, and Onion Rousham Park. The second prize also came from the Sherborne district and was of great merit. Mr. W. E. S. Erle Drax (Mr. J. H. Copp, gardener), Holnest Park, was the exhibitor

PORTSMOUTH.—November 7th, 8th, and 9th.

A larger and finer exhibition than ever was held by this flourishing southern society in the Drill Hall, Landport, on the dates named. The great building is specially adapted for such a show, as ample space is afforded for the exhibits as well as for visitors, the secret of the large attendance being the popular low prices for admission. As showing the advance in competition in almost all classes it may be stated that six tables, 108 feet long each, 10 feet longer than last year, were required instead of four as before to display the exhibits of cut blooms, fruit, and vegetables. The staging of the exhibits was ably carried out by Mr. Collins and his assistants, reflecting credit upon them, and Mr. Power, the courteous Honorary Secretary, was indefatigable in his duties to make the Exhibition what it was, a splendid success.

Plants.—Trained plants were staged on the floor down the centre of the Hall, and being mostly of good quality made an imposing display. Jubilee prizes of £10, £5, and £2 10s. were offered for eight specimens, four incurved or reflexed and four Japanese. Mr. H. Joy, nurseryman, Shirley, Southampton, was an easy first with splendid examples from 4 to 5 feet in diameter, profusely flowered and neatly trained, William Robinson, Bouquet Fait, Golden Christine, Mrs. Forsythe, Dr. Sharpe, Hiver Fleuri, and Madame Bertie Rendatler were the best. Mr. Mills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was second, staging smaller specimens. Another class for eight plants was set apart for which Mr. Penford was the only competitor, staging creditable examples of leading varieties. For the best group of Chrysanthemums, arranged in a space 50 square feet, there were the unusual number of twelve competitors. The first prize was awarded to Mr. H. Gate, gardener to G. Cook, Esq., Gosport, for plants characterised by excellent blooms, but the arrangement was faulty. The second prize was awarded to Mr. Hatch for a capitally arranged group, and the plants being well grown, but the extra sized flowers of the first prize group carried the day owing to the absence of special regulations to the contrary in the schedule. Mr. W. Roberts, gardener to E. R. Longcroft, Esq., Hall Place, Havant, was an excellent third. Three extra prizes were given in this class, and right well they were merited. For a single specimen plant Mr. Joy staged Madame Bertie Rendatler, from 5 to 6 feet in diameter, quite covered with bloom. Table plants, Primulas, and Solanums were well shown by Messrs. Molyneux, Agate, and H. Drover, Ventnor.

Cut Blooms.—These were both numerous and good, 1800 being placed in competition. The increased number of entries showed that much interest is being taken in the cultivation of Chrysanthemums in the Portsmouth district, while the quality throughout was above the average for the year.

The principal class was that for thirty-six blooms, eighteen to be Japanese and eighteen incurved, distinct, for which the second challenge trophy was offered, value £25 and £6 in money, while the second prize was £5; third, £2 10s., and fourth, £1. Six entered the list, making a capital show. Messrs. W. & G. Drover, nurserymen, Fareham, were easy winners; the incurved blooms were large and fresh, while the Japanese were of good quality, and all staged well. The varieties were as follows:—Japanese—Back row—Boule d'Or, Baronne de Prailly, Gloriosum, Edwin Molyneux, Madame C. Audiguier, and Carew Underwood. Middle row—M. J. M. Pigny, Marguerite Marrouch, Meg Merrilies, Fimbriatum, Ralph Brocklebank, and Madame Baco. Front row—Criterion, Belle Paule, Jean Délaux, Mdlle. Lacroix, Val d'Andorre, and Avalanche. Incurved - Back row—Golden Empress, Empress of India, Queen of England, Golden Queen of England, Alfred Salter, and Lord Alcester (grand). Middle row—Prince Alfred, Mrs. W. Shipman, Novelty, John Salter, Mrs. Heales, and Lord Wolseley. Front row—Lady Hardinge, Empress Eugénie, Nil Desperandum, Princess of Wales, Jardin des Plantes, and Jeanne d'Arc. Mr. Neville, gardener to F. W. Flight, Esq., Twyford, Winchester, was second, the Japanese and incurved also being smaller but capitally finished. Mr. Penfold, gardener to Sir F. Fitz-Wygram, Leigh Park, Havant, third, who staged his blooms much too low. Fourth, Mr. J. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough.

The next important class was for twenty-four blooms, half Japanese and the remainder incurved, seven competitors. Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, was easily first, his blooms being of good quality, though not "monsters," while they were staged in his usual good style. Japanese:—Edwin Molyneux, Baronne de Prailly, Meg Merrilies, Madame C. Audiguier, Avalanche, Val d'Andorre, Mrs. Falconer Jameson, Ralph Brocklebank, Boule d'Or, Belle Paule, Golden Dragon, and Madame Laing. Incurved:—Empress of India, Golden Empress, Alfred Salter, Queen of England, Golden Queen of England, John Salter, Lord Alcester, Lord Wolseley, Bronze Queen of England, Jeanne d'Arc, Nil Desperandum, and

Princess Beatrice. Mr. Trinder, gardener to Sir Henry J. St. Mildmay, Dogmersfield Park, Winchfield, was second, staging heavy Japanese and large incurved, but some a little rough. Mr. Neville was third, staging light but clean blooms. A somewhat novel class was next staged, twelve of Mrs. G. Rundle, twelve George Glenny, and twelve Mrs. Dixon, for which the sum of £4 was offered as the first prize. It cannot be said the blooms were worthy of the prizes given. Messrs. Drover were first; Mr. Penfold, second; and Mr. Woodfine, gardener to Captain Boyd, Emsworth House, Havant, third. Four competed in the class for twelve Japanese, distinct, the best coming from Mr. Inglefield, a heavy lot, the names being Baronne de Prailly, Meg Merrilies, Madame C. Audiguier, Ralph Brocklebank, M. Brunet, Boule d'Or, Edwin Molyneux, Mons. Freeman, Jeanne Délaux, Belle Paule, Criterion, and Mrs. J. Wright. Mr. Molyneux was an exceedingly close second; Mr. Trinder third. For twelve incurved, distinct, four competed, Mr. Molyneux easily leading the way with an even stand, Empress of India, Golden Empress, Lord Alcester, Queen of England, Alfred Salter, Prince Alfred, Lady Hardinge, Lord Wolseley, Empress Eugenie, John Salter, Jeanne d'Arc, and Mrs. Heale. Messrs. Drover were second, staging rather rough blooms; Mr. G. Inglefield, third. For twelve reflexed, in not less than eight varieties, Mr. Woodfine was first, staging medium-sized blooms; Mr. W. Covell, gardener to J. A. W. Martin, Esq., West Leigh, Havant, second. Five staged twelve Anemones, large varieties in not less than six varieties. Messrs. Drover were easily first with full centred blooms of Nouvelle Alveole (2), Laing's Anemone (2), Miss Annie Lowe (2), being the best. Second, Mr. J. Horril, The Union, Havant. Mr. J. Agate, Havant, third. Messrs. Drover were also first with twelve Japanese Anemones, staging substantial blooms good in colour, the best being Fabian de Mediana, Margouline, and Jean Marty. Mr. W. Covell was second.

Pompons made a good show. Six staged twelve bunches, three blooms to a bunch, of Pompons, not less than eight varieties. Mr. Neville was easily first, Mrs. Telford, President, and Mdlle. Elise Dordan being the best varieties. Mr. G. Russell, gardener to Dr. J. Lewis, Henfield, Sussex, was second. Twelve bunches of fimbriated varieties, three blooms to a bunch, formed an attractive class. Mr. Hatch, gardener to the Victoria Park Committee, was the first prize winner, Chardoneret, Scipio, and Belle Navaraise being especially fine. Mr. Agate second. For twelve bunches of single varieties, three blooms to a bunch, six competed, making a charming display. Mr. Agate was a good first, Snowflake, Ox Eye, Nellie, Mary Anderson, Patience, and Mdlle. La Moult being most noteworthy. Mr. Hatch was a good second. For the best two blooms of incurved and Japanese, arranged in separate glasses, ten competed, Mr. Molyneux was easily first with Empress of India and Edwin Molyneux. Second, no name. The premier incurved bloom was a very fine one of Lord Alcester in Messrs. Drover's cup stand, and the premier bloom in the Japanese section was found in Mr. Trinder's stand, a grand Boule d'Or.

For twenty-four blooms, to consist of six Japanese, six incurved, six reflexed, and six Anemones, open to growers in Portsea Island only, a handsome silver cup and £3 were offered as the first prize. There was keen competition. Mr. Hatch was easily first with good even stands: Incurved, Madame C. Audiguier, M. J. M. Pigny, Madame Baco, Avalanche, Hamlet, and Madame Laing; Japanese, Jeanne d'Arc, Bronze Queen of England, Golden Empress, Empress of India, Lord Alcester, and Queen of England; Reflexed, Amy Furze, Dr. Sharpe, King of Crimsons, Golden Christine, Cullingfordi, and Chevalier Domage; Anemones, Annie Lowe (2), Empress, Prince of Anemones, Gluck, Fleur de Marie. Many other classes were set apart for local competitors, in most of which there was strong competition and good blooms.

FRUIT.—This formed a creditable display. For six bunches of Grapes, three black and three white, for which the handsome sum of £5 was offered as first prize, Mr. Molyneux was easily first with Alicante and Muscat of Alexandria, both very good; Mr. Penfold second with good Gros Guillaume and fair Muscats. For two bunches of black Grapes, Mr. W. Sait, gardener to General Napier, Stakes, Cosham, was first with Alicante; Mr. E. Smith, gardener to Mrs. Learmouth, Cosham, second. For two bunches of white Grapes Mr. Covell was an easy first. The heaviest bunch was one of Trebbiano from Mr. Molyneux weighing 5 lbs. 12 ozs, the next being Alicante, 4 lbs., from Mr. Smith. £5 was offered as first prize for seventy-two dishes of Apples and Pears, which brought one exhibitor only, Mr. J. Watkins, Witherington, Hereford, who staged fifty-two dishes of Apples, the majority being large, clean, and richly coloured. Pears were smaller, yet clean. The best four dishes of Pears were staged by Mr. Trinder; and Mr. Jacob, Petworth, Sussex, was first with even clean samples of Mère de Ménage, Lane's Prince Albert, and Emperor Alexander Apples.

Vegetables were staged plentifully, and of excellent quality. For eight distinct varieties, Mr. Cox, gardener to R. K. Wyndham, Esq., Corhampton House, Bishop's Waltham, was first with superior produce. Messrs. W. Cutbush & Sons, Highgate, had a stand of well grown autumn flowering plants not for competition.

CRYSTAL PALACE.—NOVEMBER 9TH AND 10TH.

THOUGH so closely following the National Society's Show at Westminster that at Sydenham on Friday and Saturday last was very satisfactory in the quality of the cut blooms, and all the more important classes attracted numerous competitors. Mr. W. G. Head arranged the exhibits in the usual effective and convenient manner in the east nave—*i.e.*, the cut blooms on long tables, but with ample spaces between for the visitors, the groups and some of the specimen plants being placed at the sides.

The chief of the cut bloom classes was that for forty-eight, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties of each or more than two of one variety. Amongst six competitors Messrs. W. & G. Drover, Fareham, secured the leading prize (£10) with one of the most even and meritorious collections they have yet shown. The incurved were particularly clean, even, and well finished, and the varieties were as follows taken from left to right:—Back row—Lord Alcester, Golden Empress, Alfred Salter, Empress of India, Golden Empress, Lord Alcester, Lord Alcester, Alfred Salter, and Empress of India. Middle row—Mrs. Heale, Nil Desperandum, Golden Queen of England, Princess of Wales, Queen of England, Lord Wolseley, Mrs. Heale, and Mrs. W. Shipman. Front row—Prince Alfred, Novelty, Cherub, Jeanne d'Arc, Lady Hardinge, Barbara, and Empress Eugénie. The Japanese were very fresh, bright, and of good substance, the varieties being arranged as follows:—Back row—M. J. M. Pigny, Carew Underwood, Edwin Molyneux, Ralph Brocklebank, Madame Baco, Meg Merrilies, and Boule d'Or. Middle row—Gloriosum, Meg Merrilies, Boule d'Or, Madame C. Audiguier, Ralph Brocklebank, J. Délaux, and Album fimbriatum. Front row—Mr. H. Elliott, Madame Baco, J. Délaux, Mrs. J. Wright, Belle Paule, Comte de Germiny, Album fimbriatum, and Criterion. Mr. J. Horsefield, gardener to Lord Heytesbury, Heytesbury, Wilts, was a good second; Messrs. Royle & Co., Green Street, Sittingbourne, third; and Mr. J. M'Kenzie, gardener to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, though so successful at the Aquarium two days before, had to be contented with fourth place.

The class for eighteen incurved varieties, distinct, was also a good one, eight stands being entered, and Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, secured the premier honours for solid medium size but fresh blooms of the following:—Back row—Lord Alcester, Prince Alfred, Empress of India, Queen of England, Alfred Salter, and Golden Empress of India. Middle row—John Salter, Emily Dale, Lord Wolseley, Mr. Bunn, Jeanne d'Arc, and Princess of Wales. Front row—Jardin des Plantes, Lady Hardinge, Mrs. Heale, Nil Desperandum, Princess Beatrice, and Mr. Brunlees. The second and third prizes were awarded to Messrs. A. G. Hookings and J. Horsefield respectively, both showing well.

There was a surprising competition with twelve incurved blooms, distinct varieties, no less than eighteen exhibitors entering. Mr. T. Skinner, gardener to J. Aird, Esq., M.P., East Sutton Park, won the chief award with excellent examples of Golden Empress, Lord Alcester, Emily Dale, Empress of India, Queen of England, Jardin des Plantes, Princess of Wales, Jeanne d'Arc, Alfred Salter, Prince Alfred, Mrs. Shipman, and Venus. Mr. Todd, gardener to Dr. Southey, Sutton, and Mr. J. Wyatt, gardener to J. Perry, Esq., Brodenhurst, Caterham Valley, were second and third. Fifteen stands of six incurved, one variety, were also entered, Mr. Doughty, Angley Park Gardens, leading with Golden Empress of India, followed by Mr. Hewitt with Lord Alcester, and Mr. Sadler with Empress of India.

The Japanese invariably form an important portion of this Exhibition, and that held last week was no exception to the rule. Eight stands of fine bright blooms were staged in the class for eighteen varieties, Mr. W. Packman, gardener to C. E. Shea, Esq., The Elms, Foots Cray, having the best by several points. His varieties were in the back row, Ralph Brocklebank, Madame B. Pigny, Comte de Germiny, Baronne de Prailly, Golden Dragon, and Meg Merrilies; middle row—Marguerite Marrouch, Criterion, Soleil Levant, J. Delaux, Avalanche, and Marsa; front row—Maiden's Blush, Madame J. Laing, Duchess of Albany, Florence Percy, Martha Harding, and M. J. M. Pigny. The second place was taken by Mr. T. Glen, gardener to Mrs. Montifiore, Worth Park, Crawley, and the third by Mr. J. Snow, South Park Gardens, Wadhurst, Sussex.

The seventeen stands of twelve Japanese occupied considerable space, and constituted a very interesting feature. Mr. F. Skinner was first with handsome blooms of Madame C. Audiguier, Edwin Molyneux, Baronne de Prailly, Carew Underwood, Maiden's Blush, Golden Dragon, Madame B. Pigny, Belle Paule, J. Délaux, Mrs. Cannell, Val d'Andorre, and Edouard Audiguier. Mr. J. Dyer, gardener to G. H. Parsons, Esq., The Pentlands, Selhurst Road, South Norwood, and Mr. J. Wyatt were accorded second and third prizes. For the Japanese blooms, one variety, Messrs. W. & G. Drover were first with Boule d'Or, very large and handsome; Mr. Doughty, second for Belle Paule, of remarkable size and colour; Mr. Snow taking the third place with Edwin Molyneux.

Classes were also provided for Anemones, Japanese Anemones, Pompon Anemones, Pompons, reflexed and singles, in all of which attractive collections were shown, Messrs. W. & G. Drover taking most of the leading prizes. Messrs. J. Laing & Sons, Forest Hill, were first with a beautiful group of Japanese varieties, comprising many novelties, Messrs. Davis & Jones following, but the latter were first with a group of incurved varieties, the plants in good condition, and bearing fine blooms of all the leading varieties. Specimen plants were well exhibited by Messrs. Cherry, Weston, Cooper, and W. Clarke, who won the principal prizes.

Of miscellaneous exhibits there were several classes for Primulas, with special classes for Potatoes and Onions, in which the prizes were provided by Messrs. Sutton & Sons and Mr. Fidler, Reading. Non-competing exhibits were also staged by Messrs. Sutton & Sons (Potatoes), J. Cheal & Sons (Apples and Pears), J. Laing & Son (Apples), and Messrs. Cannell & Sons, who had a tasteful group of

Chrysanthemum blooms, with Zonal Pelargoniums, and Tuberous Begonias.

First-class certificates were awarded for the following Chrysanthemums:—To Messrs. J. Laing & Sons for M. Bernard; to Mr. Packman for Avalanche, Marsa, and Florence Percy, all Japanese; and to Messrs. Davis & Jones for Violet Tomlin, a beautiful incurved, a sport from Princess of Wales.

STREET (SOMERSET).—Nov. 9th and 10th.

This, though not on a large scale, was yet an interesting and highly creditable Exhibition. Mr. A. D. Porter, the Honorary Secretary, and a small Committee worked hard to make it a success, and it is to be hoped were not discouraged by a poor attendance consequent upon the bad weather. We have only space for the cut bloom classes. The best twenty-four blooms, twelve Japanese and twelve incurved varieties, were shown by the Right Rev. Lord Hervey, and remarkably good they were. The Japanese varieties were Criterion, Mons. Ardene, Marguerite Marrouch, Golden Dragon, Val d'Andorre, M. J. Laing, Maiden's Blush, La Triomphante, J. Delaux, Madlle. Moulise, and M. J. Tarin; the incurved being Lord Alcester, Lord Wolseley, Golden Empress of India, Jeanne d'Arc, Refulgens, Alfred Salter, Mrs. Shipman, John Salter, Jardin des Plantes, and Empress of India. Mr. J. Mendy was second. In the class for twelve incurved varieties, the first prize was awarded to Mr. W. Palmer (W. Baskett, gardener), Reading, and the second to Mrs. Rees Mogg. These positions were reversed in the next class—that for twelve Japanese varieties—the exhibits in both instances being fairly good. The twelve bunches of Pompons in not less than six varieties, sent by Lord Hervey, were very good both in flowers and foliage, the second prize going to Mr. A. Colson. Groups of plants were well represented, and there was a good display of fruit.

HITCHIN.—November 9th.

The third annual Show was held in the Corn Exchange, Hitchin, on the 9th inst., and though the weather was anything but favourable in the morning it cleared up towards the evening, and there was a fair attendance of visitors. The Show, despite the somewhat unfavourable season, was equal to, if not in advance of former years; indeed, it is not saying too much to state that Mr. R. Adams, gardener to G. B. Hodson, Esq., Frogmore Hall, Hertford, staged the best forty-eight incurved and the best forty-eight Japanese that has ever been seen at Hitchin. For forty-eight incurved and for forty-eight Japanese, Mr. Rd. Adams was first; second, Mr. Springham, gardener to J. H. Tuke, Esq., in the case of forty-eight Japanese; and Mr. J. Kipling, gardener to Lord Lytton, Knebworth, for forty-eight incurved. For twenty-four Japanese, Mr. Anning, gardener to W. S. Brown, Esq., Digswell House, Welwyn, was first (the only exhibitor). For twelve incurved, first Mr. Upchurch, gardener to W. F. Lucas, Esq.; second, Mr. J. Anning; third, Mr. E. Sharp, gardener to W. O. Times, Esq.; fourth (extra), Mr. E. Orsman, gardener to S. Lucas, Esq. For twelve Japanese, first, Mr. E. Orsman; second, Mr. E. Sharp; third, Mr. W. Millard; fourth (extra), Mr. J. Upchurch. For six reflexed, Mr. Kipling was first with good blooms. For six trained specimens in pots, Mr. Springham was first, and Mr. Upchurch second. For three ditto, first, Mr. Millard; second, Mr. E. Orsman; third, Mr. D. Shepherd, gardener to F. Lucas, Esq.

With groups, first Mr. E. Orsman, second Mr. W. Springham, third Mr. G. Harwood, gardener to A. Ransome, Esq.; fourth Mr. Thos. Joiner, gardener to J. Gatward, Esq. For the best specimen plants in the Show Mr. Springham was awarded the silver medal for a nice plant of M. Tarin, beautifully bloomed; Mr. Adams for the best bloom in the Show (Empress of India) silver medal; for the best bloom in the amateurs' class Mr. W. G. P. Clark was awarded a bronze medal for Golden Empress. For nine incurved, distinct, cut blooms (amateurs), Mr. W. G. P. Clark was first with a most creditable lot, the Judges awarding the National Society's certificate; second Mr. E. Cotton. For six incurved, first Mr. W. Abbiss, second Mr. A. E. Halsey. For nine Japanese, first Mr. Clark, second Mr. E. Cotton. For six Japanese, first Mrs. F. A. Wright, second Mr. W. Abbiss, third Mr. A. E. Halsey.

Table Decorations.—First, Miss F. D. Lucas, second Miss F. Barker, third Miss Mary Ransome. For three specimens in pots (cottagers), first Mr. W. Hunt. For six cut blooms, first Mr. W. Hunt, second Mr. J. Holton, third J. Saunders. Three cut blooms, first Mr. J. Holton, second Mr. W. Hunt, third Mr. J. Saunders. Six bunches cut flowers, first Mr. J. Saunders.—M.

PUTNEY.—November 13th and 14th.

The Putney Show is not a large one, but it is invariably attractive and interesting, and this year proved no exception to the rule. As on some former occasions it was held in the Cromwell Hall, which is in close proximity to two railways, and is in every respect a most suitable structure for the purpose. The plants and groups were arranged at the sides and the balconies tastefully decorated, the Show altogether presenting a bright and pleasing appearance, highly creditable to the Secretary, Mr. Moore, and the Committee. Some notes on the principal exhibits and awards are appended.

Four prizes, the first a valuable silver cup, were offered for the best group of Chrysanthemums, not less than twenty varieties. Those in competition were all of fair average merit, Mr. Townsend, Providence Nursery, Putney, being successful in securing the principal prize. His plants were healthy and in good leaf, and the flowers in excellent condition. Mr. Carter, gardener to Miss Parry, Heathside, Wimbledon, Common, was a fair second, his plants being good but loosely arranged, similar remarks applying to the third and fourth prize lots of Messrs. Batten, gardener to A. Venables, Esq., Hollywood House, Wimbledon Park, and Burnett, gardener to Captain Fenwick, Tudor Lodge, Wimbledon Common.

Trained plants were noticeable for healthy condition and free blooming. Amongst the most successful exhibitors in the various classes were Messrs. C. Bentley, gardener to H. C. Smith, Esq., The Cedars, Roehampton; J. Bentley, gardener to Sir Thos. Gabriel, Bart., Edgecumbe Hall, Wimbledon; H. Elliott, gardener to Mrs. Harrison, Leyden House, Mortlake; and J. Burnett. All these exhibited very creditable specimens. Amongst amateurs the most successful exhibitors of plants were Messrs. W. Oates, 363, Upper Richmond Road, Putney (excellent); H. Richardson, Springfield, Upper Richmond Road; J. Pepper, Eaton Lodge, St. John's Road, and H. Trengrouse, Danehurst, Upper Richmond Road.

Cut blooms were admirably shown in several instances. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, won with twenty-four incurved—the principal class in this section—his flowers being very neat and fresh. The varieties were as follows:—Back row—Lord Alcester (3), one selected as the best incurved in the show; Queen of England, Golden Empress, Alfred Salter (2), and Empress of India. Middle row:—Prince Alfred, Golden Empress (2), Princess of Wales, Lord Wolseley, Queen of England, Beauty, and Golden Queen. Front row—Mr. Bunn, Lady Hardinge, Mr. Brunlees, Princess Beatrice, Jeanne d'Arc, Jardin des Plantes, Mrs. Heale, and John Salter. Mr. Knowles, gardener to Mrs. Egerton, Solna, Putney, was second, his flowers being bright and fresh if not remarkable for size, a remark that will apply to the third prize lot of Mr. Woodgate, gardener to Lady Wolverton, Warren House, Kingston-on-Thames. Mr. Sullivan again won with twelve blooms—capital examples of Empress of India, Prince Alfred, Queen of England, Lord Alcester, Alfred Salter, Golden Empress, Lord Wolseley, Princess of Wales, Mr. Bunn, Lady Hardinge, Jeanne d'Arc, and John Salter. Mr. J. Barker was the only other competitor, and was placed second. The latter won with six blooms, the varieties being Bronze Queen (exceedingly good), Golden Queen, Empress of India, Lord Alcester, Golden Empress, and Alfred Salter. Mr. Burnett was second, and Mr. Methven, gardener to W. Keiller, Esq, Fernwood, Wimbledon Park, third.

A charming stand from Mr. Sullivan secured him the first prize for six Anemone-flowered varieties, Madame Cabrol, Jean Marty, Marguerite Solleville, Acquisition, Nouvelle Alveole, and Gluck being the varieties represented. Mr. Knowles was second and Mr. Woodgate third.

In the Japanese as in the other classes Mr. Sullivan swept the board of the principal prizes. He was first for twenty-four blooms, showing the following:—Back row—Boule d'Or, (premier Japanese bloom in the Show), Madame Audiguier, Meg Merrilies, Japonais, Mr. Ralph Brocklebank, Edwin Molyneux, Mrs. Chapman, and Criterion. Middle row—Belle Paule, Mons. H. Elliott, L'Or du Japon, Carew Underwood, Fair Maid of Guernsey, L'Adorable, and Madame Baco. Front row—Duchess of Albany, Avalanche, J. Delaux, Wm. Robinson, Mr. H. Cannell, Marguerite Marrouch, Mdlle. Lacroix, and Martha Harding. Mr. Hendon, gardener to D. B. Beresford, Esq., Castletown, Wimbledon Common, showed neat blooms for second prize. Mr. Sullivan again won with twelve blooms, Edwin Molyneux, Fair Maid of Guernsey, Madame Audiguier, Boule d'Or, Mr. R. Brocklebank, Marguerite Marrouch, L'Or du Japon, Belle Paule, Madame J. M. Pigny, Criterion, Madame Baco, and M. H. Elliott representing him. Mr. Knowles was second, showing Belle Paule finely, and Mr. Woodgate third. Mr. J. Bentley won with six blooms, staging moderate examples of Marguerite Marrouch, Fair Maid of Guernsey, Golden Dragon, Belle Paule, Madame Lacroix, and Thunberg. Messrs. Woodgate and Burnett took the remaining prizes; Mr. Knowles won with reflexed, Mr. Hendon following. There was only one stand of Pompons, that of Mr. Methven, to which second prize was awarded.

In the single-handed gardeners' classes, Messrs. Dard, gardener to J. Hooker, Esq., Lomond House, Putney; T. Picking, gardener to J. Pullman, Esq., Grove Park, Chiswick, and G. Walker, 12, Lingfield Road, Wimbledon, were the most successful, and the last named, with Mr. Pepper, showed best in the amateurs' classes.

There were several classes for Ferns, table and berried plants, &c., but space will not permit of details being given. It may be noted, however, that in the fruit classes Mr. Batten showed excellent black Grapes and Apples. White Grapes (Muscat of Alexandria) were finely shown by Mr. Luff, gardener to J. F. Schwann, Esq., Oakfield, Wimbledon Common. Amongst other exhibitors of fruit deserving of mention were Messrs. Newell, gardener to Sir E. Saunders, Fairlawn, Wimbledon Common; Campbell, gardener to Dr. Wood, the Priory, Roehampton; J. Bentley; G. Springthorpe, gardener to H. A. Alexander, Esq., Gifford House, Roehampton; and C. Knowles.

TWICKENHAM.—November 13th and 14th.

There is always a certain freshness about the Twickenham Exhibitions that is most appreciated by visitors who are familiar with the too prevalent sameness of shows generally. The local horticultural enthusiasm is great, and the exhibits of corresponding merit, amply proving that the support generously accorded by the residents is deserved. Mr. J. J. G. Pugh is a courteous and most attentive Honorary Secretary, his efforts being strongly aided by an energetic Committee.

The season has been an adverse one to some extent, and the entries were in consequence not quite so numerous as on former occasions, but compensation for deficiencies in this respect was obtained from the fact that the quality of the leading exhibits was above the average.

A class was provided for a group of Chrysanthemums arranged in a space of 50 square feet, T. Twining, Esq. (gardener, Mr. J. Parsons), winning first honours with a freely arranged group of well grown plants, the light and dark colours well balanced, but wanting a few more bright tints. The second, from Lady Freake (gardener, Mr. Street), was also an effective group, but a trifle too crowded and high in front. The third, from J. Bigwood, Esq. (gardener, Mr. Waldie), was excellent in many respects, but there were too many white and pale yellow incurved varieties, and had a few bright Japanese been introduced it would have won first easily.

The cut blooms were good in several classes, and especially so in that for twenty-four, twelve incurved and twelve Japanese. W. Furze, Esq., Teddington (gardener, Mr. Coombs), was adjudged first honours for handsome examples of the following varieties, the incurved being particularly deep, solid, and clean. Incurved—Back row—Queen of England, Golden Empress of India, Empress of India, Lord Alcester. Middle row—Bronze Queen, Lord Wolseley, and Princess of Wales. Front row—Princess Teck, Mrs. Norman Davis, and John Salter. Japanese—Back row—Boule d'Or, E. Molyneux, Madame Audiguier, and Duchess of Albany. Middle row—Comtesse de Beauregarde, Mdlle. Lacroix, Val d'Andorre, and Madame P. Pigny. Front row—Jeanne Délaux, Mr. Garnar, M. J. Laing, and Criterion. J. D. Paul, Esq. (gardener, Mr. Munro), was a good second, having twelve fine Japanese blooms, but he lost some points on the incurved; Mr. Davis was third. Mr. Furze had the best twelve incurved, and Mr. Munro the best twelve Japanese in the open classes, the latter being first in similar local classes. For six incurved of one variety Mr. Furze was first with grand blooms of Queen of England, followed by Mr. Munro with Empress of India, and by Mr. Bishop with Golden Empress of India. In a similar class for Japanese Mr. Munro won first honours for magnificent blooms of Boule d'Or, the finest specimens of the variety we have seen this year. Mr. Furze was second for Edwin Molyneux, and Mr. Bishop third with Madame C. Audiguier. With stands of flowers Mr. G. Filsell and Mr. W. Brown were the prizetakers in the order named, Mr. Brown also winning first prize for a bouquet.

In the fruit classes Messrs. Street, Davis, and Parsons were the prizewinners for black Grapes; Messrs. Davis, Garrod and Lambert for Pears; Messrs. Smith, Fitzwater and Parsons for Apples. The vegetables were numerous and good, Messrs. Stroud, Garrod and Coombs winning with collections.

The non-competing exhibits were excellent as usual. H. Little, Esq., St. Margarets, showed a beautiful group of Cypripediums, especially of C. Spicerianum, and Lycastes. Mr. Bates, Ponlett Lodge Gardens, Twickenham, sent a collection of well grown Chrysanthemum blooms. Messrs. Hooper & Co. had some excellent Gloxinia flowers. Messrs. Warren and Walker exhibited Cyclamens in fine condition. Mr. Poupart sent a collection of fruit, and Mr. Manns had an exhibit of fruit and vegetables.

ECONOMIC ENTOMOLOGY.

[Presidential address to the Highbury Microscopical Society, by James A. Forster.]

I PROPOSE in the following paper to give, in the simplest language, some few facts and observations illustrating what I would venture to term "Economic Entomology," and which I would describe as the natural history of the insect friends and foes of the gardener and agriculturist.

The importance of the study of Economic Entomology is, I think, very generally much underrated. The entomologist is too often regarded with a sort of mild scorn as a man who pokes about in odd places and who finds his pleasure in childish pursuits, or as an enthusiast wasting his time over very insignificant things and claiming for them a preposterous importance—in fact, as an example of the old adage that "Small things amuse small minds." This, I hold, is not even just to the mere collector, but when applied to a true student of insect life is simply an opinion born of ignorance. Small in size, indeed, are the animals he studies, but their importance in the economy of Nature is very great and the study of their lives a most difficult one, requiring a highly trained observation, unlimited patience, unflagging zeal, and in addition to these, a humble reverence for Nature; for to the arrogant and careless she will never tell her tale or disclose her secrets. To the insect world we owe our most beautiful dresses, famous and much-esteemed food, and some of our loveliest flowers. On the other hand, some of our direst misfortunes have been occasioned by insects, countries have been devastated by them, nations reduced to the verge of starvation, travelling rendered impossible, flocks annihilated. Surely the study of creatures capable of affording us such benefits and of inflicting such miseries cannot in any sense be deemed futile simply because they are, for the most part, small in size and insignificant in appearance. Insignificant are they only to our unaided human eyesight. Bring the microscope to our aid, and away vanishes their insignificance, and they stand out revealed in all their wonder as creatures endowed with a beauty and strength that even the higher branches of the animal kingdom cannot rival.

That the microscope has so furthered our knowledge of, and is so essential to, the study of insect life, I think sufficiently justifies my choice of a subject. I believe the subject is no unimportant factor in one of our greatest national problems—viz., the agricultural question. For, as it is evident that the conditions of agriculture in this country are undergoing and must undergo great changes, to result, probably, in the giving up of the old methods and the old productions, and the development of dairy farming, and the cultivation, at present neglected, of fruit and other products now largely imported from foreign countries—if this comes about, a national knowledge of insect life as affecting agriculture will become of increasing necessity, for with every new cultivation will come new dangers from our insect enemies. Many an insect at present rare in this country, and of no general or economic interest, may, through the introduction of some new crop or some new method of working the land, suddenly become a most formidable plague, placing the prosperity of the cultivator in the utmost peril. Such dangers can only be met and combated with success by a thorough knowledge of these minute creatures: their lives and habits, their histories, and, above all, their enemies themselves, for the most part insects. The majority of farmers and gardeners regard all insects alike as things to be killed wherever seen, and in carrying out this theory murder some of their best friends, while many of their deadliest foes, from their habit of closely concealing themselves, or from their minute size, escape detection.

(To be continued.)



HARDY FRUIT GARDEN.

SELECTIONS OF FRUIT TREES.—Already the work of planting has commenced, and a very busy season will be experienced by most nurserymen. Orders ought to be sent in at once, or the chances are the supply of many of the best varieties will be exhausted and inferior substitutes be sent instead. As a rule early planting is best, but those who prefer to defer the operation till the spring ought yet to order their trees at once, or disappointment may be the consequence of delay. If the trees are received this autumn they need not necessarily be finally planted at once, but may be laid in "by their heels" till the spring, strawy litter, or bracken being banked over the lightly covered roots before severe frosts occur.

APPLES.—Dessert varieties suitable for cordon, pyramidal, or bush training:—Beauty of Bath, Irish Peach, Kerry Pippin, Worcester Pearmain, King of the Pippins, Cox's Orange Pippin, Margil, Adams' Pearmain, Blenheim Pippin, Braddick's Nonpareil, Cornish Aromatic, Fearn's Pippin, Court Pendû Plat, Ross Nonpareil, Ribston Pippin, Lord Burghley, Cockle's Pippin, Claygage Pearmain, Nonpareil, and Sturmer Pippin. Good culinary varieties also arranged somewhat in their order of ripening and suitable for garden culture are Keswick Codlin, Lord Suffield, Stirling Castle, Ecklinville Seedling, Duchess of Oldenburg, Emperor Alexander, Peasgood's Nonesuch, Kentish Pippin, Loddington, Mère de Ménage, Waltham Abbey Seedling, Beauty of Kent, Lady Henniker, Lane's Prince Albert, Warner's King, Tower of Glammis, Minchall Crab, Alfriston, Brahant Bellefleur, Reinette de Canada, Dumclow's Seedling, Winter Margetin, Winter Greening, and Brownlee's Russet. If the trees are required to bear almost at once, or are to be much restricted, they should be on the Paradise stock, but the largest and in the end most profitable are those on the natural or Crab stock. Varieties that succeed well as standards on the Crab stock, and therefore suitable for orchard planting, are Keswick Codlin, Lord Suffield, Lord Grosvenor, Manks Codlin, Loddington, Cox's Pomona, Beauty of Kent, Duchess of Oldenburg, Emperor Alexander, Small's Admirable, Hollow Core, Waltham Abbey Seedling, Grenadier, Ecklinville Seedling, Warner's King, Bedfordshire Foundling, Annie Elizabeth, Lane's Prince Albert, Golden Noble, Hollandbury, Pott's Seedling, Frogmore Prolific, Minchall Crab, Reinette de Canada, London Pippin, New Hawthornden, Hanwell Souring, Bramley's Seedling, Winter Greening, and Dumelow's Seedling or Wellington.

PEARS.—Dessert varieties suitable for wall culture arranged somewhat in their order of ripening:—Beurré Giffard, Jargonelle, Williams' Bon Chrêtien, Beurré d'Amanlis, Pitmaston Duchess, Flemish Beauty, British Queen, Beurré Superfin, Fondante d'Automne, Brown Beurré, Louise Bonne of Jersey, Urbaniste, Maréchal de Cour, Marie Louise, Doyenné du Comice, Beurré Diel, Thompson's, Huyshe's Prince Consort, Napoleon, Huyshe's Prince of Wales, Hacon's Incomparable, Winter Nelis, Beurré Bachelier, Jewess, Beurré d'Aremburg, Glou Morçeau, Beurré Sterckmans, Josephine de Malines, Easter Beurré, Jean de Witte, Olivier de Serres, and Madame Millet. The following succeed well either as cordons, pyramids, or bush trees clear of but sheltered by garden walls:—Williams' Bon Chrêtien, Beurré d'Amanlis, Pitmaston Duchess, Louise Bonne of Jersey, Marie Louise d'Uccle, Doyenné du Comice, Durondeau, Beurré Superfin, Beurré Diel, Flemish Beauty, Duchesse d'Angoulême, Althorpe Crasanne, Beurré Hardy, General Todtleben, Beurré Clairgeau, Autumn Nelis, Bergamotte Esperen, Josephine de Malines, and Huyshe's Victoria. For orchard standards plant Doyenné d'Eté, Autumn Bergamot, Lammas, Jargonelle, Williams' Bon Chrêtien, Hessel, Windsor, Louise Bonne of Jersey, Beurré de Capiaumont, Fertility, Bishop's Thumb, Jersey Gratioli, Eyewood, Swan's Egg, Aston Town, and Colmar d'Eté. All the last named should be on the natural or Pear stock, and this stock is

also most suitable where either large wall trained or pyramid trees are required. The dwarfing or Quince stock should be named when ordering trees that are required to bear quickly and not cover much space or occupy much ground.

PEACHES AND NECTARINES.—These succeed only on very sunny walls. Good Peaches given in their successional order are Early Alexander, Hale's Early, Early Rivers, Rivers' Early York, Dr. Hogg, Grosse Mignonne, Royal George, Bellegarde, Alexandra Noblesse, Barrington, Walburton Admirable, and Sea Eagle. Salwey is the latest of all, but is rarely fit to eat. Nectarines often fail where Peaches succeed well. The following are worthy of a trial, these being given somewhat in their order of ripening :—Advance, Lord Napier, Stanwick Elruge, Balgowan, Elruge, Violette Hâtive, Humboldt, and Victoria.

APRICOTS.—These also require the shelter and heat of sunny walls, or those of nearly or quite southern aspect, and on some soils they cannot be induced to thrive. The most reliable are Early Moorpark, Large Early Breda, Frogmore Early, Hemskerk, Shipley's, and Moorpark. The last named is the best of all as far as quality is concerned, but is most liable to gumming or sudden disease of branches.

CHERRIES.—The following varieties are suitable for sunny walls :—Knight's Early Black, Early Rivers, Black Tartarian, Elton, May Duke, Governor Wood, and Royal Duke ; for cooler sites, Bigarreau, Florence, and Late Duke ; and for the coolest positions on north walls, Morello, Kentish, and Late Duke. For orchard standards or as pyramids in the open garden. Early Rivers, Adams' Crown, Elton, Frogmore Bigarreau, Governor Wood, Amber or Kentish Bigarreau, Large French Bigarreau, Late Duke, Bigarreau Napoleon, Black Tartarian, Morello, Kentish, and Flemish.

PLUMS.—For wall culture some of the best are Morocco, Early Orleans, Green Gage, Kirke's, Jefferson's, Reine Claude, Guthrie's Late Green, Transparent Gage, Coe's Golden Drop, and Ickworth Impératrice. The following are suitable for pyramids or standards :—Early Rivers, Early Orleans, the Sultan, Victoria, Gisborne's, Goliath, the Czar, Prince Englebert, Pond's Seedling, Green Gage, Purple Gage, Dry's Seedling, Winesour, and Autumn Compôte.

VARIOUS FRUITS.—Medlars are very prolific, and ripen at a time when there is only a limited variety of fruit available for dessert. They succeed best as half standards, being very difficult to train as pyramids. The Dutch produces the largest fruit, but the Nottingham is the most prolific and best as regards quality. A tree of the Black Mulberry would succeed well on most lawns, and yield large quantities of fruit. It may be grown as a bush or pyramid, but standards are the best in every respect. Of Grapes the common White Sweetwater or Royal Muscadine is the most reliable, and the old Black Cluster also frequently ripens well in sunny positions. In the most favoured southern districts the Black Hamburgh and Miller's Burgundy may be tried. Figs also require plenty of sunshine and heat. The hardiest and most prolific are Brown Turkey, Black Ischia, and White Marseilles. The most prolific Quince is known as the Pear-shaped, Portugal being a shy bearer ; the fruit, however, are large and excellent in quality.

PLANT HOUSES.

Calceolarias.—Plants in 5 and 6-inch pots may be placed at once into 7 and 8-inch pots, and in these they should make large specimens and flower early in the season. Smaller plants may be repotted as they need root room. It is a mistake to allow them to become pot-bound before placing them into larger pots. Once check them by this cause, and the plants never afterwards grow with the same freedom and vigour. Do not place the plants on dry shelves, but stand them on gravel or ashes ; they enjoy standing on material that is cool and moist. These plants are quickly devoured by aphides if grown on a dry open stage. Use for a compost good fibry loam three parts, the other part being composed of sand and leaf soil. To this a little soot may be added, and one-seventh of decayed manure. Press the soil moderately firm into the pots. Remove the small leaves at the base of the plants, so that they can be potted moderately deep. These plants root freely from the stem.

Cinerarias.—The earliest plants are very liable to be attacked by aphides now that they are developing their flower stems and buds. Fumigate gently with tobacco smoke, but be careful that the foliage is dry, but damp the stage and floor of the house before fumigating, as this assists in keeping the smoke towards the bottom of the structure. Give these plants clear sweet water every time supplies are needed. The next plants may be subjected to the same treatment. Place sturdy plants into 5-inch pots for spring flowering, and the latest in 60's for potting on again early in January.

Marguerites.—Give large plants that were lifted a light airy place until they are thoroughly established. They will then flower freely enough if placed in a temperature that ranges about 50° at night. With a little care and attention these plants will flower throughout the winter. Young plants in 5-inch pots for spring flowering should be kept close to the glass in a perfectly cool structure. Keep the shoots pinched to induce the plants to branch freely. Damp and heat are the two greatest enemies these plants have to contend against. If any of the plants are infested with a small grub in the leaves, the only cure is to pick off every infested leaf and burn them.

Double Primulas.—Water these carefully, and keep in a moderately dry atmosphere where the temperature can range from 50° to 55°. It is safer to keep the plants on the dry side than to overwater them. The soil should be kept as near as possible in an intermediate state for moisture. Avoid irregularities in this matter, and damping at the collar will be reduced to a minimum.

Single Varieties.—Those that are growing will thrive in a cool house. They will keep and do better on shelves than on a damp stage. The same care should be exercised in watering as advised for double varieties. Plants in flower should have a temperature of 50° to 55°, according to the weather, in a cool rather moist atmosphere ; the flowers are very liable to be injured by damp. On all favourable occasions open the ventilators freely, and apply a little fire heat at the same time.

Fuchsias.—The plants that went to rest first may be pruned and arranged in an early vinery or Peach house ready for starting. Do not water them before they show signs of breaking. The moisture in the atmosphere through syringing the Vines will be ample at first. Give them a little tepid water after they have commenced breaking, and when they have well started into growth shake the old soil from them and repot in fresh. Keep young plants in 60's close to the glass. Do not encourage them to grow, merely keep them moving slowly. If growth is encouraged now they will soon run up tall and weakly, and good well furnished plants afterwards in 5-inch pots cannot be produced.

Cannas.—Remove decaying stems from plants that have been stored away, and keep them dry and at rest for another month. Where decoration is done largely in dwelling houses, and foliage plants are appreciated, Cannas will be found invaluable ; they stand well, are quickly increased, as well as restored again to health.

Lantanas.—Keep these in a cool moderately dry place until they are at rest, when water may be withheld for a time. Give them the same treatment in this respect as Fuchsias. Keep young plants rooted in August in a temperature of 50°. If grown close to the glass and the shoots pinched from time to time they will be bushy little plants ready for 5-inch pots early in the new year, and will make useful flowering plants for the conservatory.

THE BEE-KEEPER.

APICULTURAL NOTES.

THE LONG IDEA HIVE.

OUR friend "Lanarkshire" is sure one fault in this hive consists in the combs being parallel to the entrance, which he implies is contrary to Nature. This matter of placing frames I have carefully studied for a long time, as I particularly wished to be sure, and I am positive—allowing of course that I may be mistaken after all—that it does not make the least difference which way the combs run. But there is one fact I have never seen anyone notice—viz., when the bees are left to themselves they never build the front comb to the bottom of the hive, at least in front of the entrance, nor the second comb either, though it is lower than the first ; thus the bees naturally provide for that free ventilation so much insisted on by the "right-angled" advocates. It is when the front combs are put to the back, reversing the natural position, that the evils of crossway combs are developed ; let them remain in their proper place and no difference will be noted.

WHICH WAY DO BEES NATURALLY BUILD THEIR COMBS?

When guides or foundation are given them they have no choice, but one writer, who professes to be an authority, has been insisting that if bees are left to themselves in a skep without any guides, the floorboard of which is either level or inclined from the back, the bees will always build their combs at right angles to the entrance. He also says, when this is not the case the floorboard will be found inclined from one side to the other. On this basis he argues that right-angled combs are the natural position. Very poor logic this, anyway about. When a hive is tilted up the hive walls are not vertical, and as Nature teaches bees to economise every little space, there is only one way in which they can do it and leave the hive walls parallel with the face of their combs ; and the said "authority" must know this, by his reference to the combs being in the direction to the pitch of the floorboard. Now, as a matter of fact, based on careful experiment as well as observations made on some thousands of skeps, if a hive is set perfectly level, with walls perfectly vertical, in a position where the sun can shine equally on three sides, and no guide or starter is given, the bees are just as likely to build their combs in any direction, but if the sun is only suffered to shine on that side the entrance is, then, in nearly every instance, the combs will be built parallel to the

entrance, proving conclusively to me that they really have no choice. But whichever way they build them they always leave a blank space in front of the entrance when left to their own natural instincts.

I am not going to defend the longitudinal hive, further than to say that this matter of placing the combs is not one of its faults. Nor do I see why they cannot be safely taken to the moors and back. The frames in mine are 14 inches wide by $10\frac{3}{8}$ deep; those with standard frames I threw out of use, as they were too shallow. These frames, when filled with Heather honey, weigh over 5 lbs. each, and though we always travel downhill at a good trot, I have yet to see the first comb break down, and most of the frames are without bottom bars too.

Our friend "Lanarkshire" seems to imply that they cannot be safely taken to the moors. This I cannot admit for a moment. Perhaps his friend did not know how to pack them up. Certainly they are not fit for a novice to use in migrating his bees; they require more knowledge of bee matter than he is likely to possess. The Stewarton hive, I freely admit, is easier to pack, safer to travel, takes up less room, and is vastly superior to the long form of hive; but even in the best patterns I am not quite satisfied. I want a hive that always stands ready packed for a journey, no matter what may be its strength or condition; then one can take advantage of a distant Bean or Clover field or fruit plantation, as mentioned by our friend, and several times also by myself. When we arrive at this perfection, and agriculturists or horticulturists are educated up to the value of bees as fertilisers, we shall have quite a demand for moving apiaries, simply to secure fertilisation of the various blossoms, and no doubt an apiculturist with a good apiary might receive enough money payment to pay all his expenses of moving. This is dreaming of the future, mind.

IN WHAT PART OF THE HIVE DO BEES STORE THEIR HONEY?

As my bees, except the Punics I have so highly spoken of, failed to gather enough Heather honey for winter food, I have had to give syrup, and this at a time when all the bees were on the alert for robbing. We should think, if they had any reason for placing their stores the most remote from the entrances they would surely do it at this time, particularly when thousands of would-be robbers lay killed under the entrances, in fact one stock most beautifully loop-holed the entrance with propolis to keep them out.

All the bees were clustered to the front in every hive, as the sun shines more on that side—frames, mind, all parallel with the entrance. Well, not one stored their syrup in the back combs; in nearly every instance the front comb was filled and sealed nearly to the bottom, and all worked from the front to the back. This was just what I expected, or was sure they would do.

THE HEATHER SEASON.

This has been a practical failure this year with us here. I am inclined to think our friend "Lanarkshire" has had much better weather for his bees. I am pleased to note he has been trying the "mile away from the Heather," as I recommended last year; and though he does not show that it is better or even as good as close on it, still his report is very favourable, and I trust he will try it again. There was not a really good day during the whole season. When it was fine, with the sun shining, there was a terrible gale; in fact, one day I was watching the bees flying against the wind to the moors, and before they had gone 100 yards I could see thousands drop. This I noted by placing my back to the sun and watching them fly along a high hedge side. Many of these would get chilled and never rise again, which would partly account in the falling off of honey. In fact I must say I never saw bees dwindle more during the Heather season.

WHAT RACE OF BEES IS THE BEST?

I have not decided this important matter yet. If the Punic race sealed their comb as beautifully and were as clean in their habits as Carniolians, I should certainly give them the preference, though they are very cross-tempered when they have the swarming impulse on. They have always been remarkable workers. Whenever a humble bee can be seen these bees would sure to be in full work carrying in pollen and honey, even if all other bees seemed fast asleep. They are the only bees I have not fed this year, the only ones that got enough for winter, and the only ones that got too much. They dwindled not at the Heather, on which they worked nearly every day, whether the sun shined or not. I am positive they never stole a drop of what they had, as I watched them too closely and should quickly have noted if they entered other hives. On October 1st we had a heavy snowstorm and 12° of frost, which cut down most plants. Since the 14th Michaelmas Daisies have been in bloom with fine warm weather. On these they have worked in a manner that does one good to see them, particularly as I had left them on a crate of my new glass sections, which I trust they will not fail to finish—I am sure they will if it keeps warm.

The next in order are Cyprians crossed with blacks. I have not had any crossed with Carniolians, though I have succeeded this year in crossing two Carniolian queens with Cyprian drones. Crossed Syrians have come well up. Carniolians are very good, and I intend trying to cross them with the Punic race both ways, as I say. I am not decided which is the best, all things considered. Each race has certain good points. Probably we shall retain and use them all, for the same reason we use such a variety of everything else in sheep, cattle, horses, vegetables, fruit, or even flowers.

ARE CYPRIANS SPITEFUL?

In another journal "Amateur Expert" says everyone who has had Cyprians two weeks are convinced that they are practically unmanageable. Two weeks is a very short time. At this age—presuming he had a queen—they would be too young to fly off their combs, and every "expert," amateur or not, knows that it is only the oldest bees in any race that ever do the stinging business. Then he speaks of "everyone who has had Cyprians." Surely he must be either a careless or reckless writer to make such an assertion, as there are hundreds of people who have had Cyprians for years, and who say they are as easy as anything to handle. I have had them two years and Syrians seven years, and I have had twenty stocks of Cyprians this summer; and I must say that handled in a proper way they are about the tamest and easiest of any race to handle. I am quite prepared to admit that they are not fit for nervous people to have, who would first accidentally, of course, give the hive a kick and then drop a frame when he had got it half-way lifted out, &c. The secret way to handle these bees is to give them no jar. If you lift each comb out with bees on and slowly turn it over, first putting it back in the hive before treating the next one, by the time the last one is done you can shake, brush, jar, or do anything with them, and when you have shut them up they are not cross afterwards.

THE EVILS OF POND'S ALIAS "SIMMINS'" SYSTEM OF QUEEN INTRODUCTION.

All will remember that I have several times pointed out in the Journal, also Mr. Bonner Chambers, F.L.S., has done so, that when queens are introduced on this system the queen introduced is mostly superseded, and that a daughter of hers often, if not invariably, takes her place. Yet in the face of what we have shown to be the truth, and which has never been denied by anyone, "Amateur Expert" has the hardihood to say elsewhere that dealers are sending out Carniolian queens for pure imported, which produce banded workers; and that they are also sending out in the fall virgin queens for fertile ones. Had he been up with the times, and have digested what has been so frequently proclaimed in this Journal, a little reflection and common sense would have told him that the Carniolian queens producing banded workers were daughters of the imported ones introduced and mated in the bee-keeper's own apiary, where perhaps all kinds of the yellow races are

plentiful, and that the reason they are proving drone layers in the fall is because all the drones are gone, so that the young queen could not get fertilised. Many have been loud in recommending the Pond's-Simmins', or Simmins'-Pond's system. Had they only recommended marking the queen first by wing-elipping or otherwise its utter fallacy would have been long ago found out.

Only the other day a dealer told me that in the autumn of 1887 he sent a noted British bee-keeper (who has publicly recommended Simmins' system as the safest to follow, and which he declares has never failed in his case) nine queens, each one of which was producing sealed worker brood when he sent her. Every one of these nine queens was stated to be a drone breeder ; but rather than have any unpleasantness he sent nine more, each one packed up with her own progeny, and yet the aforesaid consignee reported most of these drone breeders too. The dealer is sure his customer is a swindler, and no doubt the other thinks the dealer is, all because of a faulty system endorsed and recommended by certain of the big authorities (?). Of course I can understand they do not like to acknowledge their mistake, particularly because I first pointed it out, and that I am the author of an absolutely safe method, but they will have to eat their leek in the end. Truth is bound to prevail, and so will perhaps—A HALLAMSHIRE BEE-KEEPER.

THE NEW GLASS SECTION.

SINCE reading "A Hallamshire Bee-keeper's" description of his glass sections in the Journal, I was looking forward with some interest for his further details as to how they are made, fitted with comb foundation, and otherwise made ready for the honey season. If glass and the labour of cutting is so cheap as your correspondent states, and it is correct that bees prefer glass to wood, the sooner we adopt them the better. There is no doubt but that glass is the best material for making the honey look tempting, and I was very much disappointed to find he has not enlightened us any further as to how they are put together ready for the bees. It is easy enough to understand that nothing is necessary when it is full of honey. What we want to know is how they can be fitted together and placed in the racks ready for use in less time than the present wood sections. If he will do this, and take in hand to supply the 4000 pieces of glass necessary to make 1000 sections at a cost of 10s., he will confer a boon on bee-keepers in general and in particular —A SUSSEX AMATEUR.

TRADE CATALOGUES RECEIVED.

John Laing & Sons, Forest Hill, London, S.E.—*Catalogue of Chrysanthemums.*

Little & Ballantyne, Carlisle.—*Catalogue of Trees for 1889.*

Wm Etherington, Swanscombe.—*List of Chrysanthemums.*

Eugène Mézard, Rueil.—*List of Dahlias.*

Thomas Rivers & Son, Sawbridgeworth.—*Catalogues of Fruit Trees and Roses for 1889-90.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*W. J.*).—Mr. W. Collins, Martinhoe Terrace, Martindale Road, Clapham Park, London, S.W.

Books (*Doctor*).—The "Parks and Gardens of London" can be had from this office, post free for 2s. 1ld. Our reply to your second question is write to Mr. Wm. Paul, Waltham Cross, Herts.

Orchid Holder (*A. E. A.*).—Your letter is forwarded to Mr. A. Outram, who will perhaps communicate with you on the subject.

Exhibition of Chrysanthemums (*Marechal*).—It is not possible for us to answer your questions without knowing the conditions attached to the class in the schedule further than to say, if there are no limitation in the class, we fail to see why any variety should be disqualified. In all questions of dispute in exhibiting, schedules should be sent with letters of inquiry.

White Tokay Grape (*G. C.*).—As you are in possession of the Vine and can compare its characteristics as to growth, leaves, and fruit with the descriptions in Mr. Barron's book, we do not see how you can err in arriving at a decision on the matter. If you like to send adequate samples another year they shall be carefully examined. We are obliged by the notes, and shall be glad to hear from you at any time.

Gilbert's Universal Savoy (*Burgess*).—It is a little singular that a "reader of the Journal for nearly twenty years" should not have heard of this vegetable before. It has been mentioned dozens of times, and more than once fully described. It was raised by Mr. R. Gilbert, of Burghley Gardens, Stamford, and if you write him he will no doubt be able to give you particulars of its parentage and properties. It is distinct from other Savoys, and very good.

Ventilating Tomato House (*Old Subscriber*).—Assuming you do not want to commence early by forcing, your proposed method of ventilation will answer. But in addition, and as providing for the contingency of cold winds from the north, we should have large ventilators in the ends of the house in the angle formed by the roof and the top of the wall. A 9-inch wall built with bricks and strong mortar would, we think, suffice ; but on this you had better consult a builder, who would perhaps advise a supporting buttress every 5 or 6 yards.

Pruning Vines (*Walnest*).—The time to prune Vines is directly the foliage has died naturally. Scraping is not advisable, unless they are infested with insects. All that is necessary is the removal of loose bark, any that will come off by rubbing the hand along the cane. This can be done after pruning, and they can also be washed directly afterwards. For years we have used nothing for washing but a solution of softsoap, at the rate of 2 ozs. to a gallon of warm water. Weak solutions of any of the insecticides frequently recommended for the purpose will do equally well.

Seakale (*J. B. R.*).—If the growths, a foot to 18 inches long, have good crowns, the stems may be cut off, inserted up to the crowns in soil in a dark warm place for forcing; or the plants may be covered with fermenting materials, and after the Kale is cut the stems can be cut down level with the soil. If they had been cut back last spring, and the growths subsequently produced thinned, you would have good crowns now an inch or two above the soil. We should also raise sound young plants from cuttings of the roots ; these, if well managed, developing fine crowns for forcing the first season.

Caterpillars and Maggots (*Inquirer*).—If you remove the surface soil from your Rose bed, give a good dressing of lime, then add fresh soil, surfacing with manure, it will probably diminish the number of caterpillars next year and in other respects benefit the Roses. Dusting the leaves when wet with hellebore powder or making a decoction by pouring boiling water on 2 ozs. of the powder, then adding enough water for a gallon, and with that syringing the trees, will rid them of caterpillars if the work is well done. We should also treat the soil round the Plum trees that are attacked with maggots in the same way as advised for the Rose bed. Tar should not be in contact with the stems of the trees.

Name of Insect (*J. Iliam*).—The specimen sent is a species of Sirex, allied to our British Sirex gigas, and belongs to the Hymenopterous order of insects. This group are sometimes called tree wasps, but they have no power of stinging, nor do they make nests. They fly about by day, making a loud humming noise, and occasionally visit flowers. By means of the ovipositor with which the extremity of the body is furnished, the female drives her eggs beneath the bark of some tree, branch or shoot, and the larvæ feed within till they attain maturity, generally assuming the pupa condition in the same spot. Their pupatory life often lasts for years, but in the winged state they seldom live more than a few weeks.

Chrysanthemum Amy Furze (*F. W. J.*).—In the National Chrysanthemum Society's Catalogue Amy Furze is classed as a Japanese reflexed variety ; it is, therefore, admissible in both Japanese and Japanese reflexed classes, but not in those for reflexed only. This, of course, applies to the National Society's Shows, and to the exhibitions of all affiliated societies, but in all other cases in the absence of any stipulation in the schedule it is purely a matter for the judges to decide whether it is in its true class or not, and the character of the bloom would determine this to some extent. It would be far preferable, however, if the National Catalogue decision were accepted in all cases of dispute.

Lapageria Failing (*Bon Accord*).—As you attribute the deterioration of your splendid plant to the roots of Elm trees passing under the foundation and impoverishing the soil, lifting and planting again in the same house would obviously be of no avail, as the roots of the trees, if not built out, would take possession of the new soil more quickly than those of the Lapageria would. Besides, large plants of this beautiful climber do not "lift" well. We have known some of the finest seriously injured in transplanting though they were in charge

of one of the most successful of cultivators. Your large plant if removed will receive a check from which it will be slow to recover, and it may dwindle and die. Cannot a deep trench be dug outside the house, cutting off all the Elm roots, then making a concrete barrier through which others cannot pass? Some of the soil can be removed from the roots, and fresh added, sprinkling with chemical manure, and mulching to prevent the soil drying would incite the production of surface roots, and then by adequate moisture and occasional applications of clear soot water the plant might be invigorated. We should certainly try the plan before endangering the specimen by transplanting.

Oleander (*K. M.*).—We have no doubt your plant requires potting. Place it early in the year in a 7-inch pot in a compost of loam, sand and one-seventh of manure. Drain the pot well and press the soil into it firmly. Grow the plant fully exposed to the light to solidify its wood, and the flower buds will then keep on if you pay attention to the supply of water the plant needs. The glutinous substance on your Roses and Myrtle is the result of the presence of insects. On the foliage of the latter sent we found thrips and brown scale. Clear the plants of insects, and the glutinous matter will also disappear. Thrips are destroyed by fumigating with tobacco smoke, so are aphides, or by syringing the plants thoroughly with a solution of tobacco water. To clear off the scale the best plan is to syringe the Myrtle with petroleum and water, use 3 ozs. of the oil to 4 gallons of water. For this purpose you can mix the oil sufficiently by syringing one syringeful with force into the vessel containing the solution and the next one quickly on to the plant.

The Celery Fly (*T. F.*).—The leaf-miner also sometimes attacks the Parsnip. Sprinkling the Celery plants with a mixture of petroleum and water, 3 ozs. of the former to 4 gallons of the latter, has been found an efficacious mode of destroying the pest. The mixture is syringed over the plants after the sun has left them in the evening. The fly of the Celery leaf-miner, Tephritis onopordinis (fig. 52), has also transparent wings, but with tiny brown patches upon them. The head and body in this species are brownish, eyes dark green. May appears to be the month when it is particularly abundant, though there is a later brood, or possibly two; the maggots growing rapidly when the sun is of average warmth. Towards the autumn a few linger on in the leaves, but most of them descend to the earth before the cold nights of autumn, remaining there as pupæ through the winter months. This maggot or



FIG. 52.—TEPHRITIS ONOPORDINIS.

larva, which is legless, whitish green, blunt at the tail, with sharp retractile head, shows itself by producing blisters upon the Celery leaves. These patches, first white and afterwards brown, are sufficiently visible for children to be employed in pinching the leaves infected, and hundreds or thousands may be thus killed. If the operation, however, is performed carelessly or hastily the plants are likely to be as much injured almost as if the maggots had been left untouched. In some cases the plants are positively killed by this pest, especially where water has been scant and manuring not well attended to, because the new growth does not then replace the leaves that have perished. One of the correspondents of this Journal states that he has found brewers' hops a good preventive. When the Celery seedlings are pricked out he sprinkles some hops amongst them, and at the time the plants are removed to the trenches he puts more between the rows. This seems to keep the flies from approaching to deposit eggs. Also the leaves may be dusted with soot, lime, or other substances which are likely to keep them from settling upon the young plants. The winter is an important season for operations, since many pupæ are lying then in the earth just below the Celery; hence the advantage of scraping off the surface and of rough digging, which buries some too deep for the flies to emerge, and brings others within reach of birds. Or gaslime may be used to give the soil a dressing; this will kill most of the pupæ.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*A. C.*).—1, Alfriston; 3, Dumelow's Seedling; 4, Evargil; 5, Winter Greening; 6, Cox's Pomona. (*S. Taylor*).—1, Lemon Pippin; 2, Irish Peach; 3, Ecklinville; 4, Summer Strawberry; 5, Not known; 6, Mère de Ménage. (*George Swailes*).—We cannot identify Warner's Pippin with any recognised variety.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Flora*).—The numbers were displaced on some of the specimens. 2, Cyrtomium falcatum; 4, Adiantum cuneatum. Of the other two the larger frond is Polypodium aureum, the smaller Nephrolepis tuberosa.

COVENT GARDEN MARKET.—NOVEMBER 14TH.

TRADE quiet, with heavy supplies, especially Grapes.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
,, Nova Scotia and Canada, per barrel	10	0		22	0	Oranges, per 100	4	0		9	0
Cherries, ½ sieve	0	0		0	0	Peaches, dozen	2	0		6	0
Cobs, 100 lbs.	100	0		0	0	Pears, dozen	0	9		1	6
Grapes, per lb.	0	6		2	6	Plums, ½-sieve	2	0		4	0
						St. Michael Pines, each	3	0		8	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	10		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	0	0		0	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	1	6		3	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	1	0		2	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	8
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3		to	6	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	3	0		6	0	Mignonette, 12 bunches	3	0		6	0
Asters, dozen bunches	6	0		12	0	Narcissus (Paper White), 12 sprays	1	0		1	6
,, French, per bunch	0	0		0	0	,, (French) dozen bunches	4	0		9	0
Azalea, 12 sprays	1	0		2	0	Pelargoniums, 12 trusses	1	0		1	6
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	6		0	9
Calceolaria, 12 bunches	0	0		0	0	Pyrethrum, doz. bunches	0	0		0	0
Camellias, 12 blooms	3	0		4	0	Roses, Red, 12 blooms	1	0		2	0
Carnations, 12 blooms	1	0		2	0	,, (indoor), dozen	1	0		2	0
,, 12 bunches	0	0		0	0	,, Tea, dozen	2	0		4	0
Chrysanthemums, 12 bl.	1	0		4	0	,, yellow	3	0		6	0
,, 12 bchs.	3	0		9	0	Stephanotis, 12 sprays	4	0		6	0
Cyclamen, dozen blooms	0	4		0	9	Tropæolum, 12 bunches	1	0		2	0
Dahlias, 12 bunches	0	0		0	0	Tuberoses, 12 blooms	0	6		1	0
Encharis, dozen	4	0		6	0	Gladiolus, 12 sprays	0	0		0	0
Gardenias, 12 blooms	1	6		4	0	Violets, 12 bunches	1	6		2	0
Hyacinths (Roman), doz. sprays	1	0		1	6	,, Parme (French), per bunch	3	6		5	0
Lapageria, 12 blooms	1	0		2	6	,, dark	1	6		2	0
Lilium longiflorum, 12 blooms	6	0		9	0						

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Evergreens, in var., dozen	6	0	to	24	0
Arum Lilies, per dozen	9	0		12	0	Ferns, in variety, dozen	4	0		18	0
Arbor vitæ (golden) dozen	12	0		24	0	Ficus elastica, each	1	6		7	0
Asters, 12 pots	0	0		0	0	Foliage plants, var., each	2	0		10	0
Begonias, various, per doz.	4	0		9	0	Fuchsia, dozen pots	3	0		6	0
Chrysanthemum, doz.	4	0		9	0	Genista, per dozen	6	0		9	0
,, large, doz.	15	0		24	0	Hyacinths (Roman), doz.	9	0		12	0
Coleus, dozen	2	0		4	0	Lilium, various, doz. pots	12	0		21	0
Cyclamen, dozen pots	9	0		18	0	Margnerite Daisy, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Mignonette, per dozen	0	0		0	
Erica hyemalis, doz.	12	0		24	0	Myrtles, dozen	6	0		12	
,, gracilis, doz.	9	0		12	0	Palms, in var., each	2	6		21	0
,, various, doz.	8	0		18	0	Pelargoniums, scarlet, 12	3	0		6	0
,, viridis, doz.	12	0		24	0	Primula (single), per doz.	4	0		6	0
Enonymus, var., dozen	6	0		18	0	Solanums, doz.	9	0		15	0



MANURE IN AGRICULTURE.

"THE farmers have taken all our sewage sludge, and its effect upon the crops is so satisfactory that we are certain of a ready market and prompt sale for it in future." So said the surveyor of a large town to us recently, and glad indeed were we to hear him say so, for we have long held that the pollution of rivers by town sewage is an extravagant act of folly, and we know that sewage

farming is a very questionable process. Sewage distributed daily in its crude state over any piece of land slowly but surely clogs the pores of the soil, and its effluvium then becomes more and more offensive, sending sickness and disease upon every passing breeze into every habitation within its reach. These facts ought certainly to have weight with the corporations of large towns and cause them to hesitate before taking up any costly sewage scheme rashly.

A general adoption of some method of sewage precipitation is inevitable, by means of which it becomes deodorised, the effluent passing from it free of all foul taint or scent, and all its precious fertility being retained in the sludge. Apart from any sanitary consideration, the high commercial value of the concentrated fertility of sewage commends the matter strongly to general attention. The best form in which such "native guano" has come into our hands was in that of a dry powder manufactured by the International Water and Sewage Purification Company at their works at Acton. This powder is inodorous, of light weight, and therefore very portable and easy of application to the soil. Applied to Barley with the mixture of nitrogenous and mineral manures we used this season, its effect was to increase the bulk of straw and yield of grain materially. But it was upon root crops that it told best. Used side by side with a heavy dressing of farmyard manure for Mangolds it held its own admirably, and with Swedes the crop was altogether superior to that from farmyard manure. If this very excellent form of precipitated sewage can be so prepared and sold to the farmer at a low rate the sewage problem is practically solved. Before all things we would advise the Company to strive for two things, and these are to render the ratio of fertility to bulk as high as possible, and to be content with a low margin of profit at the outset. Once get such a manure thoroughly established in home commerce as a prime fertiliser of the soil, and an increasing profit would be found in a growing demand.

But, alas! the introduction of a new manurial agent is a slow and difficult undertaking. No matter how disinterested one may be, how pure and effective the manure, how clear and unmistakeable the results, ignorance and prejudice combine to hinder that which is so clearly desirable for the common good. Among other reasons for this foolish opposition the adulteration of artificial manures specially mixed for certain crops is certainly one of the chief causes, yet it has been proved to demonstration repeatedly that without a systematic and intelligent application of manure farming does not answer: with it, it undoubtedly continues to answer, and although we cannot hope for a return of the exceptional high prices of the "good times," yet we know that with sound practice a fair margin of profit may still be had. Lying upon our table as we write there are two bunches of Wheat ears, each bunch being a fair sample of the crop in the field from which it was taken. One bunch consists of puny ears much undersized—just so many meagre starvelings. We rub out the grain from one ear and find the number to be exactly twenty-four. Turning to the other bunch we have fine bold ears, all fair examples of really well grown corn, and one ear affords fifty-seven fine bold grains as superior to the others in size as in quantity. We quote this as a fair example of the wide difference there is between high and low farming; but the lesson has a much higher significance, for it clearly illustrates the cause of failure and success. To have a full and profitable crop of Wheat we must first have cleanliness, drainage, and mechanical division, then by a judicious use of manure, timely culture, and the use of pure carefully selected seed, the requisite crown and finish is given to our work.

We were led to write this article by reading an interesting account of a new sewage scheme for Manchester in *Bell's Weekly Messenger*. The Corporation of that town purpose spending £490,000 upon this important undertaking, the most interesting features of which to farmers are two large intercepting sewers, and the chemical precipitation of the sewage, which under the existing system finds its way into the Irwell by numerous drains and streams. The sludge obtained by the process of precipitation is to be offered to farmers at the rate of about 25 tons daily. It is supposed there will be a ready sale, because in Leeds the demand for the sludge is greater than the supply. The sludge requires no preparation for use by the farmer, it comes to his hands ready for the land at a price which appears to induce everyone who can get the sludge to give it a trial.

WORK ON THE HOME FARM.

Excellent work is being done on the land now, ploughing and sowing being pushed on, and every effort made to bring up the heavy arrears of such work as closely as possible by the end of this month. So far the Wheat plant that is visible is quite satisfactory, and we are glad to find germination in the seed Wheat quite up to the average. The general prevalence of cold wet weather while the Wheat was in flower induced many farmers to fear that full development of the grain could not follow, but by careful cleaning there is no difficulty in obtaining really good seed. The chief difficulty so far has been in sowing-in really well, for much heavy land becomes saturated with moisture near the surface after a few days' steady rain, so that when the weather becomes fine again it is only by a free use of the harrows before and after the drilling that we can get the seed well covered.

Pigs have been altogether withdrawn from the stubbles, and are now closely confined to the yards. We have more pigs than is usual at this season of the year in order to turn all inferior Barley to best account by using it for them. We altogether prefer large warm sheds to single sties or pens for pigs, for with plenty of dry clean straw, wholesome food, and a yard for gentle exercise, they thrive and run very little risk of disease. It is undoubtedly because they are kept in small dirty sties and are allowed to consume much foul garbage that there are such heavy losses from swine fever. We may be told that in order to turn pigs to full account they must be used to make manure, and this fact of necessity involves having some filth in the yards. But if due care is taken to use fresh litter sufficiently often no harm to the pigs need arise from it.

Lambs entering the hogget stage require special care just now, and they should be withdrawn from low damp pasture and sodden heavy land. They require change, and answer best when folded upon Turnips or Mustard by night, and are let run upon sound pasture by day. The high value of sheep as an adjunct to corn farming has induced farmers to give more attention to having a fair proportion of pasture of some sort or other for them.

OUR LETTER BOX.

Treatment of Poor Pasture (*A. B.*).—The poor weedy pasture should be ploughed now, and next spring by the repeated use of plough and harrows, weeds and grass should be all got out of the soil, collected in heaps, and burnt. How early this can be done will depend upon the weather. The frequent stirring of the soil to clear off the weeds will impart the deep fine tilth to it which it is so important to have in a seed bed for the Grasses of permanent pasture. As soon as the soil has thus been made ready for the seed sow the following mixture:—Perennial Rye Grass, 10 lbs.; Cocksfoot, 7 lbs.; Timothy, 3 lbs.; Tall Fescue, 3 lbs.; Meadow Fescue, 3 lbs.; Crested Dogstail, 2 lbs.; and 1 lb. of each of Sheep's Fescue, Rough Meadow Fescue, Hard Fescue, Milfoil, Perennial Red Clover, White Dutch Clover, Alsike, and Cow Grass. If required a crop of Oats may be taken with the seeds, but as your sole object appears to have good pasture as soon as possible do not sow Oats. If the soil is poor apply with the seed 1 cwt. of nitrate of soda, and ½ cwt. each of steamed bone flour and mineral superphosphate.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. November.		9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
		Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	4	29.87	47.4	46.4	N.E.	47.4	54.6	43.2	76.8	31.6	0.040
Monday	5	29.849	47.7	47.7	N.E.	47.6	53.7	44.5	68.4	36.3	0.020
Tuesday	6	29.891	39.6	37.5	E.	47.5	40.5	39.2	43.5	29.7	—
Wednesday	7	29.783	34.6	33.6	E.	45.3	39.6	35.8	45.5	3.0	—
Thursday	8	29.876	39.1	38.6	E.	43.9	44.6	36.2	48.0	32.2	0.118
Friday	9	29.80	38.9	39.4	E.	44.2	46.3	38.9	54.2	39.4	0.214
Saturday	10	29.906	29.7	38.2	E.	43.9	46.4	35.2	64.1	25.3	0.278
		29.842	41.3	40.2		45.7	45.5	39.0	57.2	34.5	0.580

REMARKS.

4th.—Morning generally bright, afternoon dull with one or two faint gleams of sun, showers in evening.
5th.—Dull and foggy early, bright day, drizzly evening, gale at night.
6th.—Fresh cold day without sunshine, gale at night.
7th.—Cloudy and cold.
8th.—Dull cold day, rain at night.
9th.—Wet till 11 A.M., then overcast.
10th.—Fine bright day, rain at night.
Cooler, damp, and generally overcast.—G. J. SYMONS.

DISAPPOINTMENTS.

NOVEMBER is a month in which many cultivators are rewarded for the productions of their skill as placed in competition at public exhibitions. These comprise Chrysanthemums mainly, yet by no means exclusively, for many other plants, such as those grown for table decoration as well as for furnishing conservatories effectively, are awarded prizes at autumn shows, while a great number of awards are made for various kinds of fruit and vegetables. But although the rewards are numerous, and in the vast majority of cases well deserved, yet the disappointments are immeasurably greater in number, for the sufficient reason that there are far more blanks than prizes in public exhibitions, and the greater and closer the competition, the greater the number of contendents who must perforce fail to get into the charmed circle of prizewinners. It is not in human nature to be joyous in the moment of defeat, but most of those who sustain it accept the fact manfully, note the points of superiority against them, recognise the deficiencies in their own produce, and resolve to overcome them and to win next time. That is a spirit which all admire, and no men are more popular at shows than those who win the reputation of being good losers ; and then, when these win, as they are sure to do sooner or later, if skilful and persevering, they receive the heartiest of congratulations on their triumphs. Some exhibitors there are who cannot brook defeat, and can never feel they have deserved it, though the fact may stand out bold and clear to unprejudiced on-lookers who are capable of arriving at a just decision on the matter.

At most shows there is a disposition on the part of the losers of prizes to accept with dignity the verdicts of the judges, though there are occasionally exceptions. These are fewer than formerly, due, probably, to a becoming self-restraint in a moment of disappointment, and, it may be, in part to the greater care that is taken by show officials to appoint adjudicators whose experience renders them capable of arriving at just decisions. Undoubtedly it is most important that judges should be competent, independent of all local influences, and careless of all personal consequences resulting from the awards, regarding nothing but their own reputations, that can only be sustained by an unswerving adherence to the high principles of doing what they believe is right in each case. When they do this, and because they do it, they are assailed by disappointed men in the reverse of courteous terms, and by spiteful pettifogging acts they feel that the strongest compliment is paid to them, and their character as adjudicators is the more widely appreciated. The abuse of judges of repute by exhibitors who cannot accept defeat gracefully usually affects prejudicially the latter and not the former.

It is not suggested that the most experienced of adjudicators—men whose verdicts are rarely questioned, except by an occasional bad loser, are incapable of making mistakes—of overlooking a small fault in one thing, and slightly over-estimating a merit in another. If that were so there would be no new trials in judicature, nor verdicts reversed on appeal. The best of judges are liable to err, because they are human ; but the greater the special knowledge they possess on the subjects before them, and the greater their field of observation and comparison, with the training of the eye and the mind, resulting from much practice, the less they are liable to be misled into recording wrong decisions ; and if by chance they err, or are thought to have erred, they do not hesitate to re-examine any exhibit when requested to do so by show officials, as the result of a formal and suitable protest in writing from an exhibitor. Protests respectfully made are respectfully entertained, and this fact obviates recourse to the vulgar practice of pestering, not to say abusing, men when engaged in their duties, and who have only one object and desire in view—namely, to do what is strictly fair to all. The unfortunate habit alluded to is much less prevalent than formerly, but is not yet quite extinct.

Judges of recognised standing are fully alive to the responsibilities of their position, and their duties are sufficiently onerous without the worrying they have sometimes to endure from exhibitors who are hunting for honours, which, for whatever reason, cannot be granted. These remarks apply more particularly to what may be fairly termed advertising exhibitors. They bring articles of various kinds to shows, not with the object of adding to the interest of or supporting those shows, but for taking orders, and hence, as far as possible, enriching themselves. To this the judges at the same shows can have no possible objection so long as they are not interfered with, but they object to being followed and solicited with irrepressible importunity for certificates for enhancing the value of their wares. In the majority of cases they have no authority for doing anything of the kind suggested, and in some have no means of knowing the merits of articles exhibited, as these can only be ascertained by comparative experiments extending over a period of months. Judges complain seriously of the present condition of things in the respect indicated ; and the time has arrived when the relative positions of enterprising tradesmen at shows, the officials, and the judges should be clearly defined. The former should be told whether or not honours are provided for such exhibits as theirs. If they are, the judges will as readily do their duty as in other classes ; if they are not, appeals to adjudicators should cease as out of place, and disappointments on both sides would be averted. A judge at a not unimportant show has made the statement that he was so "pestered" by an advertising showman that he "gave him a certificate to get rid of him." That admission is somewhat startling. The judge defended his action on the ground that he relied on the statement of an authority as to the excellence of the article ; but all the same, the right and honest way of registering the honour in question would be, "This certificate was granted to Mr. Cheeky for pestering!"

Stress has been laid on the importance of engaging experienced judges as a means of imparting confidence in the justice of the awards, and hence for reducing possible disappointments to a minimum, as it is a proved fact that losers accept the verdicts of men of national repute better than those of others less known, however competent they may be. Do not let it be understood, however, that the engagement of the "older hands" only is advocated. Nothing of the kind is suggested ; on the contrary, it is most desirable that younger men should share in the work, as the supply of men who "know their business" in this matter is by no means in excess of requirements, and there is further the possibility that some of the new men may with a little practice not only equal but surpass the old, and these will then readily stand aside. The great point to secure is efficiency, regardless of age or the particular calling of individuals. Some disappointed mortal occasionally derives comfort in proposing that a particular class of men should not act as judges, but this only seems to increase the engagements of the class they would proscribe. The truth is, exhibitors and show officials have no fads, but search for men who have given evidence of their capacity for doing what is required, and they will continue to do so.

It may, or may not, be desirable to change judges. That is a question for committees to decide. A proved mistake in an important class commonly leads to a change ; and in some cases changes are made because a desire is felt to try fresh men without in the least mistrusting the old. Occasionally men not far distant

are chosen, as travelling expenses are less. The plan has answered and has failed; in the latter case cheapness having been bought too dearly. Comparatively new judges, especially if of nervous temperament, are much more comfortable if they have an old hand and cool head to assist them, alliances of that nature usually answering very well, the steadying element being advantageous.

As disappointments are plentiful at the present time, and as the majority of them have arisen through the verdicts at shows, not necessarily wrong verdicts, and as the subject is uppermost in the minds of a large body of persons interested in exhibitions, these remarks may not, perchance, be entirely unseasonable.

ON LILY CULTURE.

"M. M.," page 424 of your Journal, complains that as regards his experience in the culture of L. auratum, some were potted for conservatory decoration five or six years ago, others were planted out in the bed of a greenhouse, others planted in various parts in the open ground, and in almost every instance the bulbs have degenerated. I fear that this is a common experience. Our knowledge of the conditions necessary to the good growth of Lilies is yet but in its infancy. I have grown Lilies by hundreds, perhaps thousands, every year for the last eighteen years, and it is only by accident that I now know how L. auratum can be grown. I am speaking solely of out-of-door culture; but if that which is the hardest can be attained, then the culture, which is the easier under glass, may be made more simple. I think in the first place that growers in general do not recognise the requirements of Lilies, which are, A, to flower and bloom well in the current year; B, to make new growth and a good sound bulb for the future season's flowering. Unless the second condition is attained then you have a weak growth next season with either a poor flower or none at all—degeneration as "M. M." observes; and I much fear that in planting Lily bulbs the conditions necessary for B are not generally recognised and considered. I will endeavour to explain what my experience on this head has taught me.

1, Very few Lilies like scorching sunshine; they prefer a partial shade to protect their roots but to rear their flower heads into sunshine, while the lower leaves and roots are conccaled by surrounding herbage. This is the natural wild condition of many Lilies. Therefore an eastern or western aspect is preferable to a southern one.

2, Lilies like moisture at their roots, and this, as a rule, is sparingly given. Out of the eighteen years in which I have grown Lilies, this season and one other very rainy season about twelve years ago were the very best I have known for Lily growth. The bulbs turned up at the end of the season large, firm, and with splendid new growths. The ground this year in which I have seen auratum, eximium, Wallacei, and Martagon growing splendidly is a heavy loamy soil completely saturated and water-logged all the summer—the last place one would choose for growing Lilies; yet in that stiff saturated soil—situate it is true on the slope of a slight hill, and with a gravel bed 3 feet underneath, through which the water flows—small offsets the size of nuts, and Walnuts, planted two years back, have been taken up this year hard sound bulbs as big as a small Orange, and larger bulbs planted one, two, or three years back in equally good condition, only larger in size. I believe water does not hurt Lilies growing out of doors, though supplied in any quantity, but is beneficial. Such at least is my experience.

3, Deep planting should be practised. These auratum bulbs are planted from 12 to 15 inches deep, so that except in very dry seasons their roots can always revel in moisture. Before I tried (by accident) this most unlikely soil I lost hundreds of auratum yearly by sunstroke, and I found on examination the base of the bulb generally rotten, and nothing but stem roots alive. Under such circumstances no fresh bulb growth could be made, and a hot sun scorched the inadequately nourished foliage.

4, It must be remembered that imported bulbs bring with them fungus germs, which in past times used to destroy case after case of shipped bulbs. This was partially put a stop to by packing each bulb in mud, then hermetically sealing them. I believe I was the first to suggest this plan. In this way, now that the bulbs are more carefully grown and brought to the port to be packed, they come over in much better order; yet out of these a certain per-centage contains these deadly germs, which develope during the spring and destroy the inside growth with the power of reproduction, hence every grower must expect a certain per-centage of deaths. This generally takes place in June, when warm sunshine proves too much for the plants. Summary.—My experience, therefore, teaches me that, as a rule, Lilies should be planted deep in a cool sheltered aspect where they can get sunshine for a part of the day on their flowers in rich, clayey, or loamy soil (I prefer these to peaty soils) well supplied beneath with moisture. I should not hesitate in planting auratum bulbs in a ditch or at the edge of a rivulet, and I find that the longiflorum, speciosum, and Martagon tribe do equally well in these soils, and that the Thunbergianum section grow into large weighty bulbs.

Locality.—It must be stated that these observations on culture apply to Essex only, where the rainfall is scanty, often only 20 inches in the year, and where the sun is often very scorching; but as I have corresponded with residents in many parts of our island on Lily culture I find that Lilies are grown best generally in Scotland and on the western coasts of England rather than in the central and southern. This, again, strengthens my position that moisture and cool air and a cool moist soil are indispensable to Lily culture. In fact, I may say that where Iris Kœmpferi hortensis grows well there will also L. auratum thrive planted between the clumps of Iris. If "M. M.," and others like him, will try again in the direction indicated by these remarks they will, I think, be able to recite a different experience.—ALEXANDER WALLACE (*Author of "Notes on Lilies and their Culture"*).

ALNWICK SEEDLING AND GROS MAROC GRAPES.

THE dull sunless season that we have had has been the means of showing the former of these two black Grapes to the best advantage. At the exhibitions we have seen it repeatedly in splendid form, realising the most sanguine expectations as to its merits. Its colour—when colour has been conspicuous for its absence generally—has been all that could be desired, and its combination of good qualities renders it one of the best black Grapes in cultivation.

The latter of the above seems also to be slowly but surely growing in popular favour, and deservedly so. As a late black it will compete with any variety known Its flavour, however, is much better from Christmas onwards, say to the end of April, than it is prior to the time named, unless it be worked on another stock, either the Muscat of Alexandria or Black Hamburgh. Even on its own roots its flavour during the early season is better than some other sorts which are more largely grown; for instance, Gros Colman, "which, by the way, is also much improved by being worked upon the stocks above mentioned."

Mention was made of both the above Grapes in a notice of Nannau Park in these columns last season. It was my pleasure to see them again recently, and I find that Mr. Cooke is extending their culture. A Vine grown on the extension of Alnwick Seedling was carrying from fifty to sixty bunches of capital size, and black as sloes. Gros Maroc was also in splendid condition; abundance of well-formed bunches, and equally well coloured. Those who intend planting new Vines this season will do well to try both, is the opinion of—BRADWEN.



CYCNOCHES CHLOROCHILON.

A SHORT time since several exhibitors brought this peculiar Orchid before the Floral Committee of the Royal Horticultural Society, and it attracted much attention by reason of the singular form of the flowers and their strange colouring. It is not a novelty, but is one of the old varieties which has been almost lost sight of for a number of years, and has been rescued, as it were, from its obscurity by some who can appreciate the remarkable floral structure of Orchids in others besides those simply fitted for decorative purposes. The genus Cycnoches is a peculiar one altogether, and comprises some interesting examples of the phenomenon of dimorphism in the flowers, one of which—Cycnoches Warscewiczi—has been described and figured in this Journal. C. chlorochilon is a native of Demerara, whence it was obtained in 1838 by Messrs. Loddiges of Hackney, and for some years after it became known to cultivators it was a favourite at shows and elsewhere. Mr. B. S. Williams says, "We used formerly to exhibit fine specimens of these plants at the Horticultural Society's Shows at Chiswick, and also at those held in the Regent's Park Botanic Gardens, and they were greatly admired on account of their grotesque formation and their conspicuous flowers." C. chlorochilon has stout conical pseudo-bulbs bearing

the flowers at the top in pairs, the sepals and petals bright green, the lip broad and yellowish with a dark blotch at the base, and directed to the upper portion of the flower. The column is slender, curved, green, and in the position where the lip is usually seen in Orchid flowers. The plant is of strong habit, requiring a compost of peat and sphagnum, with the temperature of the Cattleya house, supplying abundance of water and moderate shade. Flowers of a plant of C. chlorochilon recently exhibited are shown of their natural size in the illustration, fig. 54, page 471.

DENDROBIUM WARDIANUM.

To grow plants of this Orchid to perfection they should at this time of the year be kept in a house of which the minimum and maximum temperatures are about 40° to 50° respectively, and should be so kept until the buds begin to swell, when they may be taken to a warmer house to open their flowers. Of course during the time the plants are subjected to this cool treatment water must be withheld, but when the flowers are opening a little must be given. In treating Dendrobium Wardianum in this manner the flowers will be larger and of finer substance; furthermore, it stops the young growths from pushing till after the flowering season, when they will come much stronger than if allowed to grow at the same time the flowers are expanding.—En Avant.

NATIONAL CHRYSANTHEMUM SOCIETY'S CONFERENCE AND SHOW AT SHEFFIELD.

November 16th and 17th.

It was proposed some time since that a Conference of Chrysanthemum growers should be held in conjunction with the National Society's Exhibition at Sheffield, and the idea was carried into effect under direction of Mr. W. K. Woodcock. Mr. Tunnington of Liverpool and Mr. E. Molyneux of Bishops Waltham were invited to contribute papers as a basis for discussion, and both most willingly complied, the former choosing as a title for his subject "A Chat about Chrysanthemums," and the latter "The Influence of Wood Ripening on Buds and Blooms." Mr. John Wright was unanimously desired to take the chair, and the Conference was opened at 6.30 P.M. on Friday last in one of the large rooms in the Maunche Hotel. The room was crowded, amongst those present being Messrs. R. Ballantine, William Holmes, W. Tunnington, E. Molyneux, W. K. Woodcock, George Gordon, Lewis Castle, W. Bardney, R. Falconer Jameson, E. Harland (of Hull), J. Udale, and G. Harris (Alnwick). After a few introductory remarks by the Chairman, in which he commented on the valuable services rendered by Mr. Tunnington in promoting the culture of the Chrysanthemum, the latter proceeded to read the following paper :—

A CHAT ABOUT CHRYSANTHEMUMS.

Many years ago, probably near upon a quarter of a century, the Chrysanthemum was a favourite flower in the neighbourhood of Liverpool. About that time the late Mr. Broome of the Inner Temple Gardens paid us a visit, and brought with him trained plants of Cedo Nulli to show Liverpool growers how plant-growing, or more correctly speaking perhaps, how the training of the Chrysanthemum was carried out in the south. For this the then existing Society presented him with a handsome walking stick. We have had several teachers, if I may so term them, for although they may not have actually taught us very much, they inspired Liverpool growers with a determination to excel in the culture of this particular flower. If my memory serves me right, Mr. Hobbs of Bristol next came upon the scene with small but neatly dressed flowers. In this respect they surpassed those grown with us, but we had size on our side, a feature that has characterised Liverpool flowers even up to the present time. I have said the Bristol flowers surpassed Liverpool flowers in neatness, for dressing was not then practised by us. The very same character marked the flowers contributed at a later date (about seventeen years ago) by Mr. Rowe of Roehampton. At this particular time I had to be content with a third place with large but undressed flowers. As I could see dressing was an essential that could no longer be ignored if the post of honour was to be gained, so I set about the manufacture of my own tools; they are rough examples in comparison to what are used by growers at the present time, but they answered my purpose, and I still use them. About this time the late Mr. Hignett and Mr. John Wilson of Sandfield Park were the foremost trained plant growers, and the late Mr. Wm. Briggs, also of Sandfield Park, was the first to show trained plants of Japanese at the Liverpool Show. Plant-training steadily improved, and here I intend to leave them, having only referred to the Japanese for the purpose of showing that no progress was made in the culture of this class before 1878. They were never exhibited as cut flowers until that year, when I staged a box of eighteen varieties that seems to have attracted particular attention.

But during all these years considerable attention was devoted to the incurved section, and every exertion seems to have been put forward by growers to secure a leading position and keep it. Steady, but sure, had been the progress made in the culture of the Chrysanthemum (especially the incurved). Since then we have marched forward at a very rapid rate. The few incidents that took place ten years ago stirred up growers all over the country. We can only perceive what rapid progress has been made when we contrast the number of growers then and now, the number of Chrysanthemum exhibitions and the money offered then and at the present time, and the difference between the flowers staged then in various parts of the country and the perfection in which they are staged now.

Before passing to the few cultural details I intend troubling you with, I may be permitted to briefly note the cause that largely brought about such a revolution in the culture of this favourite autumn flower. In 1878 ten guineas were collected from those interested in the neighbourhood of Liverpool, and offered in three prizes for twenty-four incurved blooms as an inducement to our southern friends to compete against us. This really was the outcome of a discussion of the merits of the two growers, north and south. But time prevents me touching farther on that matter; suffice it to say, this offer only brought one competitor from the south, and if I may be permitted to class it as a representative one, it displayed a more marked difference than I anticipated would be the case between northern and southern growers. The flowers were very similar to those staged years before by Messrs. Hobbs & Rowe, while Liverpool flowers had increased in size and vastly improved in neatness. The spirit of rivalry that had been created could not stop; it is well it did not. It brought about the Chrysanthemum tournament induced by the liberal challenge trophy that was presented by the President of the Kingston-on-Thames Society in 1879. Though I had grown Japanese for many years this was my first attempt for competition. At that time I may fairly claim for the north the foremost position for incurved flowers, and at the same time admit our southern friends were ahead of us with Japanese, simply because they possessed the best varieties. Great progress has been made in Liverpool, and even greater progress, perhaps, in the neighbourhood of many northern provincial towns. I do not doubt that the same marked progress has taken place in the south. I cannot help thinking that growers were not in real earnest prior to 1878, except perhaps in their own immediate neighbourhood, The bold stand of the south, and the even bolder stand of the north about that period, seems to my mind to have fanned the flagging enthusiasm of growers to do their utmost to gain the victory in the friendly struggle that was to be waged between their respective growers. My successful journey from home encouraged others, and in the following year several ventured from home for the first time, and the result has been wonderful progress in Chrysanthemum growing in the immediate vicinity, at least of many large centres in the northern provinces—in fact all over the country. I shall now give a few details of northern culture; or, perhaps, more correctly, my own views and practice that I have found to result satisfactorily.

I shall not waste your time by minutely detailing how the plants should be treated after flowering; suffice it to say they should be placed in a light position near the glass in a cool airy structure to induce the production of strong sturdy cuttings.

THE BEST TIME TO STRIKE CUTTINGS.

This is a point on which a variety of opinions exist. My experience has led me to divide the plants into two sections, and treat them differently. In this matter I have found that Japanese require a longer season of growth than the incurved section, except a few varieties such as Barbara, Eve, Mabel Ward, &c., which should be rooted with the Japanese; those we strike in December, and the incurved by the end of January or any time during February. I have always succeeded in obtaining better flowers with broader florets by late than early striking. This applies especially to the Empress and Queen family.

STRIKING THE CUTTINGS.

All the growers about Liverpool do not strike their cuttings on the same principle. Some insert them in cold frames, some place them thickly together in pots and place them on a shelf, and are not particular about them flagging and so on. I make up a slight hotbed in a vinery about to be started, with leaves and a small quantity of manure. Particular care is taken that the heat is only of the gentlest description in order to prevent the cuttings from flagging, and at the same time assist them to root in less than half the time than would be the case by cool treatment. Weak growers are rooted singly in small pots, and also those intended for trained specimens. Others are rooted together in 5 or 6-inch pots. By the time the plants are rooted

hotbeds are made for them in cold frames of the same description as for rooting them, they are potted singly and plunged. They become established by the time the beds cool down, which avoids checking the young plants. Weak plants, as well as those for trained standards, are potted on and encouraged by a little bottom heat. Under this treatment they gain strength and make rapid progress. The object to be attained is strong but sturdy growth from the time the plants are hardened to cool frame treatment to the time they are placed outside in May. This is achieved by giving abundance of air and the removal of the lights as the season advances when the weather is favourable. The weather must guide the cultivator whether he is to place the plants outside early in May or towards the end of that month. A sheltered spot should be found for them, or a temporary protection should be given to them in case of late frosts or cold cutting winds. Every care, however, must be taken of them at this stage, for they are easily injured. I have seen the leaves blown off them, and plants subjected to such cruel treatment seldom recover.

POTTING.

Before potting is commenced we place in the position the plants are intended to occupy, old boards, 1 yard apart, on which we stand the plants, pot to pot, until July, when they are placed 6 to 9 inches apart, according to the number of shoots that the plants are allowed to carry. The plants are placed in their flowering pots during May as they are turned outside. We have found 9 and 10-inch pots most suitable, and if larger are used two plants may be placed in them with good results. In draining the pots oyster shells are preferred to crocks, whole ones at the base, and for the top they are broken up moderately fine. Over this a good pinch of soot is scattered to keep out worms and act as a stimulant to the plant. In potting, the soil that I shall recommend should be pressed firmly into the pots. When potting is finished room should be left in the pot for at least the addition of 2 inches of soil.

THE SOIL.

We use turf green from the field chopped about the size of an egg To this is added one 8-inch potful of soot, the same quantity of pounded oyster shells, the same quantity of bonemeal, and a small quantity of leaf mould to each barrowful of sod.

THE MAY BUD.

There appears to be a good deal of misconception about the May bud. In my opinion it is the result of a check or early striking, and I scarcely remember an example of this when the old stools have been cared for and the plants struck at the time suggested. My advice is Avoid this bud. In nine cases out of ten it throws the bud that should appear from the middle of July wrong. If the plants show this tendency help them out of it as quickly as possible by removing the points of the plants, and select three or four shoots to carry one bloom each. In the case of doubtful kinds that occasionally go blind, stop them in May and run up five or six shoots, and when you have secured the right time buds and observe them swelling, thin out the shoots to three or four. If we do not stop them we always run up more shoots than we intend to retain—that is, from the natural break in July. We stop some and grow others without, and then seldom fail to secure a good flower at the time it is wanted.

FEEDING.

We feed very little before the bud is secured. What we are in the habit of using is liquid from the farmyard diluted with water and a little soot dusted on the surface of the soil during showery weather. A few years ago we had in the garden a cesspool, the contents of which liberally diluted with water I found an invaluable food for the Chrysanthemum. To those who have not used it my advice is give it a trial. At one time we had practically only natural liquids, but nowadays we can make liquid from such a variety of special manures, or dust them on the surface of the soil, and most if not all of them are useful for a change.

TAKING THE BUD.

I have said I am a little later than most growers in securing buds. For the incurved I do not care to take them before the last week in August, or the first three weeks in September, though some of the Japanese might be taken earlier. The aim of the cultivator should be to secure them during the latter dates. When plants have been pinched in their earlier stages some of the shoots will show before others, although on the same plant. This can be regulated to a very large extent in July; for instance, if they show early in that month allow them to grow on until the middle of that month. They must then be pushed to make the next growth by clearing out all lateral growths from the axils of the leaves. At this stage examine the remaining shoots on the plant, and if small growths have commenced showing in the axils of the le ves rest assured that a bud is forming. My plan is to clear out all growths as in the preceding ease, take out the point of the plant, and do for it what it would otherwise do for itself. But if left alone it would come in too late to be of service for showing.

STAKING AND TYING.

This may be passed over, for nearly each cultivator has a slightly different method, and all answer the purpose, as long as the plants are not broken and each shoot is secured separately, so that light and air can reach them on all sides. One other matter of importance is, that we allow all the shoots of our plants to sway loose 18 inches above the tie, which saves many points from breaking. Some say birds will break the shoots if they alight upon them, but in over twenty years I have observed a solitary robin on these plants, and the shoot it rested on did not break. It is mostly caused by wind and rain, when the plants are tied too near the top.

RIPENING THE WOOD.

I do not attach much importance to this; all that I have ever found to be necessary is to stand the plants sufficiently far apart so that light and air can play all round them. The ripening of the wood depends largely upon the time the bud is taken. Ripening commences to take place rapidly after bud formation and the leaves below it have fully expanded. If the buds are taken too early in August the wood in some seasons ripens too much, and the result is a flat flower and a multitude of narrow petals. Over-ripened wood is, in my opinion, the cause of smaller flowers in the south, and narrower petals than we are in the habit of producing.

TOP-DRESSING.

I advised room in the pots for 2 inches of soil, and this space is to be filled up with rich material as a top-dressing for the plants. This is an important matter. It keeps the roots in full activity, and they are therefore capable of taking up food much more freely than they could possibly do if the roots became sluggish. We top-dress to the extent of exceeding the limit of the pot by placing pieces of turf above the rim. The soil when the flowers are expanding should be full of active roots. This keeps the lower foliage in a healthy condition to the last. Here lies the secret of large flowers possessing depth, solidity, and breadth of petal.

AFTER HOUSING.

Now begins one of the most critical periods in the plant's life, and many plants go wrong from the day they are housed. Many a young grower has had all that could be desired in the way of plants, and evil results have followed a continuation of the treatment the plants received outside. The same strong feeding must not be continued for a time. The plants sulk after losing what they delight in—namely, night dews. If bright weather continues, considerably more moisture is evaporated from the foliage, and any failure in making up for these deficiencies will prove detrimental to the plants. Syringe them thoroughly two or three times a day, according to the weather. When they are accustomed to their new quarters we feed again on the same principle as before housing, and continue to do so until the flowers are ready for cutting. We fumigate with tobacco smoke after housing, for neither plants or flowers will thrive if fly exist upon them.

I shall pass over the subject of dressing, for enough has been written about it, in fact sufficient to frighten a young beginner. My advice is grow the flower fully out, as however good the dresser may be he cannot make a good bloom out of a bad one.

KEEPING THE BLOOMS.

After they are expanded, put them into a dark outhouse as dry as possible. Once I had occasion to place some plants in a certain shed, and there was some lime in a corner that was just falling. This I had always thought assisted in keeping them by absorbing the moisture in the atmosphere. The flowers kept three weeks, and were staged in good condition afterwards. I give this for what it is worth, and think it well worth trying. My last advice is, beware of fogs if real success is to be attained, for in one night they will undo the work of the whole season.

Discussion being invited by the Chairman, with an intimation that questions might be asked and opinions freely expressed either for or against propositions advanced, each giving credit to the other for the best of motives, even if opinions differed, as all were engaged in the common object of acquiring knowledge on points in connection with Chrysanthemum culture—

Mr. LEDGER asked if Mr. Tunnington could explain the reason why some plants of the same variety differed in the time of showing crown buds; and why some plants should grow through them, so to say, not

producing crown buds, but pushing on to the terminals. The questioner intimated that the latest plants were struck in January.

Mr. TUNNINGTON replied that if some of the plants were topped in May by nipping out the points, shoots would be certain to be produced showing crown buds at the right time. He suspected the plants were struck too soon, and some of them received a check. The great point was to keep them steadily growing under the best conditions from start to finish.

Mr. BARDNEY said he never knew plants fail to produce crown buds, though they might form at the wrong time, and even not be seen. If they did not appear at all he should conclude the growth was too soft for their formation.

Mr. PARKES, Derby, desired more particulars on the cutting-down system, which he understood was advised by the reader of the paper.

Mr. TUNNINGTON said he neither practised nor advised cutting down as it is generally understood for the production of the finest blooms; topping was a very different thing for assisting the plants when it was seen they were forming buds too soon, while the next might be too late if the plants were allowed to lose time in the first bud formation.

Mr. BARDNEY explained that in topping, as practised by Mr. Tunnington, shoots differing in length resulted, and buds were formed at different times, those that were right being set, the others regarded as surplus and removed for concentrating the resources of the plant to the development of the blooms.

Mr. FALCONER JAMESON asked if buds did not form sometimes that were too small to be set or taken?

Mr. TUNNINGTON answered that might be so, but in such a case he thought the plants must be weak, and the best plan would be to take out the point and push them on to the next bud, and time would be gained, not lost, by the pinching.

Mr. PARKES wished to have more information about "feeding" before the buds formed, as he did not see how to gain strength of plant without the use of stimulants sooner than was advised. Mr. Ledger also said he found it neeessary to apply stimulants before the final potting.

Mr. TUNNINGTON in reply reminded the first named inquirer of the use of freshly cut turves for potting, and pointed out the steady decay of the grass in the soil afforded the plants all the support they needed till the buds were taken, and Mr. Ledger, he said, raised his plants too soon, and allowed them to get root-bound; if he would strike strong healthy cuttings later and grow the plants without any check he would succeed in his object. Mr. Tunnington further observed that in "taking" the buds it was often desirable to remove the surrounding shoots by degrees, allowing one to extend somewhat for taking the sap and "easing" the bud, or the whole force of a vigorous plant driven into the bud might spoil it or lead to the production of a malformed bloom.

Mr. Tunnington's paper, and his prompt and clear replies to the various questions gave great satisfaction to the meeting.

Mr. E. Molyneux was then desired to read the following paper:—

INFLUENCE OF WOOD RIPENING ON BUDS AND BLOOMS.

THE ripening of the wood of Chrysanthemums is a very important matter in the growth of these plants for the production of high-class blooms; indeed, without perfectly ripened wood it is impossible to have blooms of the finest quality in all respects. Let it be understood that what I mean by perfectly ripened wood, is wood that is ripened sufficiently by natural means as the result of correct treatment throughout. Sun is essential for the maturation of plants in all stages of their growth; but in some seasons and districts there may be too much of it, and in others not enough, and we must make the best of both circumstances. Wood-ripening does not consist in merely hardening the wood, but storing it with nutriment for the blooms. Forcing the ripening, so to say, by drought or in other ways, contracts the sap vessels unduly, impeding the free flow of nourishment for the blooms at a critical time, and those persons who practise such methods in cultivation act erroneously and fail to produce the best blooms.

Seasons vary so much that the locality in which growers reside is a very important factor in the production of good or bad blooms. Circumstances occur over which cultivators have no control, which prevent them showing the ability they may be admitted to possess. They cannot, for instance, excel during a cold wet summer in a low damp district. The higher and drier the locality the harder the wood and the greater the disposition of the plants to set buds prematurely. This is a difficulty some have to contend with, myself among the number. Where buds are persistently formed long before the time we wish to see them much valuable time is lost in the growth of the plants in their various stages during the time the buds are forming. Moreover, high and dry localities predispose to narrow petals, and rather small but solid blooms; while reverse conditions are promotive of broader petals and larger blooms. Where the locality is high the air, although much rain may be registered, is drier than in the lowlands, and it is this dry air that precipitates bud formation that gives so much trouble to some growers. The proper time to "take" buds of some varieties is upset altogether under such conditions. They form either too early or too late for producing the finest blooms.

Then the question of dew is important. During a hot and dry summer, as in 1887, the absence of dews in high-lying districts is much felt. Dew invigorates, and its scarcity or absence has been the cause of many small blooms. We can regulate and control moisture in the soil, but have practically no power over it in the atmosphere. We may do our best and may do some good, but after all the most we can do is but little in providing compensation for what we may consider the shortcomings of Nature.

When the growth of plants is soft and gross, the latter particularly, and the wood pale green instead of brown in colour, a want of ripeness is evident. Such plants produce blooms large in diameter, but they are usually lacking in depth and solidity of the petals. This is more noticeable in the incurved section than in the Japanese family. Blooms which are composed of extra broad florets are seldom if ever as solid as medium sized blooms having narrower petals; neither can the former be considered of such high quality as those deeper in build and consequently more firm and more likely to stand fresh a longer time. Blooms having unusually broad florets often show decided roughness and irregularity, and the dresser is not able to present such blooms in the same highly finished condition as when the petals are narrower and the blooms more solid.

The present season is considered to have been a bad one for the growth of large high class blooms, especially in the incurved section. This is borne out by the examples which have been staged at various exhibitions. It cannot be said they have been of the highest quality, or as they have been shown in some past seasons. Some stands have been extra heavy in the size of the blooms, owing to the immense breadth of their florets, but many of the blooms lacked depth in proportion with diameter, consequently they were not so solid as they would have been had the blooms been deeper in proportion to their breadth. After a summer like the past one, we expect to see large blooms which lack solidity and closeness of the petals—a condition which is owing mainly to the unripened state of the wood. I am not in favour of extra large blooms of the incurved section, which are only large in one way—diameter, for the reasons stated—they lack depth and solidity. My idea of an incurved bloom is one not great in diameter alone but deep and firm in build, consequently of a better shape. Such blooms are never seen with extra broad petals, but they carry what is known as a good "shoulder," being rather more orange shaped. Such blooms as I have described are the result of perfectly ripened wood and are seldom met with after a season like the past. Where prizes are offered for the premier incurved bloom in a show, this honour generally falls to a specimen of the character indicated, and not to a flower which has merely two points in its favour—extra width of bloom and broadness of florets. Blooms which are generally chosen for this honour are usually remarkable for solidity and high finish, which two latter qualities cannot be obtained from blooms which have extra broad and thin florets. The ripened character of the wood is the all-important factor in the production of blooms of the highest possible standard of excellence, and the complete maturation we seek is obtained, as far as seasons allow, by careful treatment from the beginning.

The method of culture I advise as the most likely to obtain the desired end is that of growing the plants from the first stage on to the culminating point in a regular steady manner, not by starts and stops such as applying water regularly for a time, then neglecting the plants for a few days. Regular attention to potting is important, or before they become so root-bound many roots must be broken in the process, causing a check to the steady progressive growth that is so desirable in plants for producing the finest blooms. Crowding the plants in their younger stages of growth is most hurtful, and antagonistic to the development of vigorous wood and foliage. Sufficient space should always be allowed the plants. When in their summer quarters they should be arranged in an open position where the sun can shine directly on them, but the position should be protected from north, east, and south-westerly winds, which are often so destructive early in the season when the plants are first placed out of doors. Many plants have been so injured by a loss of their lower leaves during May, that they have never recovered the desired strength. South-westerly winds, which are prevalent during the end of August and the early part of September, often do much damage to the buds and leaves where the plants are much exposed. The flower buds and their peduncles are at that time so tender that the skin may be much injured by being whipped about, so to speak, that a check occurs to the development of the blooms owing to the tissues being broken, thus checking the full and regular flow of sap.

Some growers set too much store on plants with extra thick stems

and gross green leaves. These are, perhaps, pleasant to look upon during the summer, by the uninitiated, but when the test of good culture comes to be looked for, blooms possessing the desirable characteristics are generally missing. Very exuberant plants produce blooms devoid of solidity and other essentials as a rule.

It is possible to have the plants in some seasons ripened too much in dry localities. The summer of 1887 was a most trying one to contend with in high and dry districts, where not a drop of rain fell for eleven weeks, and scarcely any dew during a greater part of that time. The remedy in this case is that of shading the pots from the sun during the hottest parts of the day, by boards set on edge in front of them, fern, cocoa-nut fibre, or mats. Such means keep the roots in a cooler state than they otherwise would be with the sun shining directly on the pots most of the day. In the absence of shade to the pots the roots on the sunny side are almost sure to be killed, and we all know what that means. Plants in low lying districts invariably produce the broadest florets and the largest but not the best wearing blooms. The advantage of those which are more solid in character is often exemplified when the two kinds have stood two days at a show and borne the heat of crowded rooms. Those which are firm remain so longer than those which are more or less loose. These latter quickly show an "eye," which proves their weakness and non-sustaining form.

Flower buds are generally produced upon plants at a more regular time in the various stages of growth when the plants are steadily, hence properly, ripened than when they are not, except in very high and dry localities, where they ripen their growth too early, causing premature bud formation; this must be counteracted as much as possible, though it cannot always be prevented. Growers in the extreme southern counties often experience too early bud formation, caused by a too early ripening of the wood which their northern brethren are strangers to. This generally occurs with the whole of the Queen family, the plants forming flower buds at times between the end of March and the same time in April, causing a serious interruption in their future growth, and preventing the formation of buds at the time most desirable for the district in which the grower resides.

Mr. BARDNEY opened the proceedings by frankly stating the paper they had just listened to had taken him quite by surprise, for he thought its tone would be in opposition to the Liverpool practice, and that stress would be laid on the necessity of extra ripening or hardening the wood. He had come prepared to oppose any such idea; but he found he had nothing to combat, so he would ask the wood-ripening advocates to be good enough to state the meaning of the term, as he thought there was a little confusion on the subject.

Mr. UDALE said a clear conception of the process of wood-ripening was desirable. Some thought it meant mere hardening; but he thought it meant well fed and not pithy wood. For instance, if Vine wood is pithy the best Grapes do not follow, but for the production of these it must be firm and fortified, and should not the same rule hold good in the Chrysanthemum? The best of growth should be induced. Sheer hardness caused by checks was not ripening; but it must be of good quality, stored with nutriment, and given this it would be found that cuttings struck as late as July would often produce very fine blooms.

Mr. BARDNEY failed to see the analogy between Vines and Chrysanthemums, for these are herbaceous plants, while Vines are not. He believed the growths of Chrysanthemums might be over-ripened or rather over-hardened as in the case of last year, and he did not think some of the very hard wood contained much "quality."

Mr. G. GORDON said he was glad Mr. Molyneux had put in a claim for depth of bloom and solidity, and these essential qualities could not be had from immature growths. Something more than mere size was wanted. He feared the attempts to produce huge Japanese blooms had a tendency to demoralise growers of the incurved, hence much of the coarseness of the present day. Mr. Bardney said that wood should not be ripened (No, no, over-ripened). Very well, that meant starvation—starved wood. He thought the reason why blooms in the south were more solid and refined was the consequence of the sun there rendering the plants more highly matured, at the same time the southern blooms were at one time too small, and he credited Mr. Tunnington with having done good by taking his fine examples to Kingston, as since their southern blooms had been larger, while at the same time many of them retained the old quality and finish, and he believed the better the wood was matured—not starved—the deeper, more solid, and more refined the blooms.

Mr. GARNETT, speaking on wood-ripening, treated the subject philosophically. He referred to the importance of perfect leaves for performing their functions of elaboration of sap and secreting nutrient matter in the stems; therefore, without general vigour of plants good leaves cannot be produced, and, failing these, satisfactory results cannot be expected. With strong, actively working leaves under the influence of sun, the wood was well stored with matter for the support of the blooms, and that was what he thought a chief element in maturation.

Hearty votes of thanks were then proposed to the readers of the papers, who briefly expressed their thanks, and after the Chairman had reviewed the chief points raised in the course of the discussion, a unanimous vote of thanks was accorded to him for the admirable and impartial manner in which he had performed his duties.

THE EXHIBITION.

THE National Chrysanthemum Society's first provincial Show was held in conjunction with the Sheffield and West Riding Chrysanthemum Society and the Shefficld and Hallamshire Gardeners' Mutual Improvement Society, in the Corn Exchange of the town named, on Friday and Saturday last. A liberal schedule had been provided with some twenty-three open classes, and it was therefore surprising and disappointing to find that the entries were not so numerous as had been anticipated both by the local and metropolitan societies. Several causes had no doubt operated to check exhibitors, one of considerable importance being the unfavourable season, not only for producing fine blooms but also for keeping them. The consequence was that the southern growers had lost most of their best specimens, while the northern growers, whose plants had felt the effects of the frosts more severely, probably did not feel strong enough to enter the lists with a prospect of satisfactory results. There might also have been an element of fear acting as a deterrent. All were expecting a very severe competition, and each thought he would be courting an ignoble defeat by bringing his blooms to the contest. In any case the Liverpool growers altogether failed to appear, though from the south one exhibitor, Mr. Packman, had sufficient pluck to compete, and staged blooms of a very creditable character. It was a source of regret to many that neither Mr. C. Gibson nor Mr. E. Molyneux exhibited, though both were present; and as regards the first-named, if he had only brought the blooms which he exhibited at Wimbledon on the previous day (Thursday) he would have had a clear course in several classes and added materially to the interest of the Exhibition. It appears that the officials of the National Society had no knowledge of the number of entries until the evening before the Show, when it was too late to communicate with exhibitors, and it is evident that at any future exhibition of this character material alterations must be made in the method of receiving entries.

As a gathering of gardeners and Chrysanthemum growers, however, the meeting proved a remarkable success, for all the principal districts in the North of England were represented, and there was also a large party from the South. The Conference held in the "Manuche Hotel," on the Friday evening, was a marked success, and, as will be seen from the papers read and the discussion elicited, recorded on preceding pages, was of an extremely interesting and instructive character. A general wish was expressed that at all future provincial shows of the National Society arrangements will if possible be made for similar conferences.

The Exhibition was formally opened on Friday at 2 P.M., by Lady Stephenson, who was accompanied by Sir Henry Stephenson and Archdeacon Blakeney, all of whom made brief and appropriate speeches, as also did Mr. William Holmes (Hon. Sec. of the National Society), Mr. R. Ballantine (Vice-President), Messrs. W. K. Woodcock, J. W. Jarvis, and J. W. Newsham, representing the local societies.

The Judges were, for plants, &c., Messrs. T. Garnett and George Gordon; for incurved blooms, Messrs. J. Wright and R. Dean; for Japanese blooms, Messrs. Lewis Castle and J. Udale.

The principal class was that for "the best representative collection of large flowering Chrysanthemums, not more than twelve blooms of any section. The following sections, or any part of them, to be represented—incurved, Japanese, reflexed, Japanese reflexed, large Anemone, and Japanese Anemone, the first two sections to be distinct varieties, the remaining four not less than six varieties in each section, and not more than two flowers of any variety." The prizes were a silver cup, value 15 guineas, and £10 in cash as the first, £6 for the second, and £4 for the third. There were three competitors, and a very unusual circumstance occurred—namely, they were all disqualified for non-compliance with the conditions stated in the schedule, and were then judged the stands on their merits. Mr. Parker had only three varieties of Japanese Anemones; Mr. Packman had two blooms of Madame John Laing in his stand of Japanese reflexed, thus making thirteen varieties or fourteen blooms of Japanese; and Mr. Morton had a bloom in his stand of large Anemones, which was considered to show too much in the style of the Japanese Anemone to be admissible. Having come to this decision the Judges found it a simple matter to determine the relative positions of the exhibitors, the leading honours being accorded to Mr. R. Parker, gardener to J. R. Corbet, Esq., Impney Hall, Droitwich, for fine, fresh, handsome blooms, and including the premier incurved Lord Alcester and the premier Japanese Avalanche, both magnificent blooms of their respective varieties.

Mr. Parker's stand comprised the following blooms. Twelve incurved—Lord Alcester, Queen of England, Empress of India, Lord Wolseley, Alfred Salter, Prince Alfred, Golden Empress, Golden Queen of England, John Salter, Jeanne d'Arc, Princess of Wales, and Mrs. Heale. Twelve Japanese—Baronne de Prailly, Edwin Molyneux, Madame C. Audiguier, Avalanche, Boule d'Or, Meg Merrilies, Ralph Brocklebank, grand; Val d'Andorre, J. Délaux, Golden Dragon, fine; Madame J. Laing, and Thunberg. Twelve Japanese reflexed—Val d'Andorre, Amy Furze (2), Maiden's Blush (2), Jeanne Délaux (2), Criterion (2), M. J. Laing (2), and L'Adorable. Twelve reflexed—King of Crimsons (2), Irene, Chevalier Domage (2), Cullingfordi (2), Golden Christine (2), Peach Christine, Pink Christine, and Mrs. Forsyth. Twelve large Anemones—Mrs. Pethers (2), Acquisition (2), Fleur de Marie (2), Gluck (2), Empress (2), Lady Margaret (2). Six Japanese

Anemones—Mdlle. Cabrol (2), Fabian de Mediana (2), and Sœur Dorothée Souille (2). Mr. W. Packman, gardener to C. Shea, Esq., Foot's Cray, Kent, was second, his incurved being smaller, but fresh and well finished; in fact his blooms were not so heavy in any section as the first prize stand. The best of the incurved were Mrs. Heale, Jeanne d'Arc, and Barbara; Japanese, Avalanche, and Boule d'Or; Japanese reflexed, Criterion, and Jeanne Délaux. Especially good was Jean Marty in the Japanese Anemone stand. Mr. T. B. Morton, Mowden Bridge Nurseries, Darlington, was third. The incurved were small and rough; the Japanese were thin, showing a want of colour in the varieties also. The Japanese Anemones in this stand were very good. The large Anemone stand contained a bloom of a variety which showed decidedly the character of a Japanese Anemone, therefore could not be regarded as belonging to the large-flowered Anemones.

There were no entries in the classes for thirty-six, twenty-four, twelve, or six incurved blooms, a most unaccountable circumstance. For thirty-six Japanese blooms, not less than eighteen varieties, there was only one entry, that from Mr. Parker, which contained capital blooms, the varieties being as follows:—Boule d'Or (2), Baronne de Prailly (3), Comte de Germiny, Meg Merrilies, Madame C. Audiguier (2), Ralph Brocklebank (3), Avalanche (2), M. Brunet (2), Japonaise, M. J. M. Pigny, Mdlle. Lacroix (2), Golden Dragon, Edwin Molyneux (2), Fair Maid of Guernsey, Jeanne Délaux (3), Martha Harding, Maiden's Blush, Duchess of Albany (2), Tlunberg (2), Marguerite Marrouch, Madame Laing, and Fernand Féral. There were no entries in the class for twenty-four Japanese blooms, while in the class for twelve Japanese, distinct varieties, there was only one, Mr. J. R. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft Hall, which was an even and good stand; the varieties being Ralph Brocklebank, Belle Paule, Boule d'Or, Meg Merrilies, Mdlle. Lacroix, Sceptre Toulousain, Marguerite Marrouch, Soleil Levant, Criterion, Jeanne Délaux, Golden Dragon, and Maiden's Blush.

The classes confined to growers residing within a radius of twenty miles from Sheffield parish church produced a fair number of entries, while the blooms were in most instances of fair quality. For twelve Japanese varieties Mr. W. Redmill, gardener to J. G. Lowood, Esq., Five Oaks, Glossop Road, Sheffield, was first, his best blooms being Baronne de Prailly, Dormillion, and Criterion. Mr. W. Redmill was again first for six Japanese, staging good blooms of Val d'Andorre and Criterion. Mr. J. Walker, gardener to B. P. Bromhead, Esq., Broomhall Field, Sheffield, staged the best hand bouquet of Chrysanthemums.

For the best group of Chrysanthemums arranged for effect occupying space not exceeding 81 square feet, a belt of Ferns and other plants allowed as an edging, Mr. J. Redmill was the only competitor with a group very well arranged, but the blooms were of moderate quality only. For six trained specimens (large flowered varieties) Chrysanthemums, Mr. J. Walker was first with small plants of leading varieties. For three trained specimens (Pompons), distinct varieties, Mr. J. Walker again took leading honours with small plants.

In the class for the best group of miscellaneous plants arranged for effect, occupying a space not exceeding 64 square feet, Mr. W. Collier, gardener to John Eaton, Esq., Shannon Bank, Sheffield, was first with a light arrangement of suitable plants of Palms, Crotons, &c., its one fault being the pots in front being too freely exposed to view. Mrs. H. Wilson was a close second, her group being rather too green in the front—not enough flowering plants used. Mr. J. Speight, gardener to Mrs. Fawcett, Clark House, Sheffield, was a good third. The best twenty pots of British Ferns were staged by Mr. J. Eadon, Canfield Road, all healthy plants; and Mr. J. Newsham, Covenant Cottage, Meersbrook, was second. The best six Primulas, red or white, double or single, were staged by Mrs. H. Wilson, Westbrook; second, Mr. F. Shorter. Three pots of Selaginellas, distinct, were best staged by Mr. J. Speight, gardener to Mrs. Fawcett, Clark House, Sheffield, with small well grown specimens.

Fruit was not largely shown. The best two bunches of black Grapes were staged by Mr. A. Malcolm, gardener to J. G. Conlishaw, Esq., Tapton Cliffe, Sheffield, shapely bunches of Alicante of good colour. Second, Mr. C. F. Shorter, gardener to R. F. Mosely, Esq., Croft House, Brineliffe. Mr. Malcolm was the only exhibitor of two bunches of white Grapes, showing good examples of Golden Queen.

Non-competing exhibits were noteworthy, especially that from Messrs. H. Cannell & Sons, Swanley, Kent, which contained six boxes of cut blooms of Zonal Pelargoniums of excellent quality, making that part of the hall in which they were staged particularly bright. They also staged several boxes of cut blooms of Chrysanthemums of new and leading varieties. Messrs. Davis & Jones, Lilford Road Chrysanthemum Nurseries, London, had six dozen blooms of new and leading varieties of Chrysanthemums. Messrs. Fisher, Son & Sibray, arranged a central group of plants in the hall, consisting of well grown stove and greenhouse varieties, also cut blooms of greenhouse Rhododendrons, and boxes of Lapageria profusa and Lapageria maculata, the latter new variety having full solid blooms mottled with white; for this a first class certificate was awarded. The same firm also showed plants of their new Yew, Taxus adpressa elegantissima. Mr. S. W. Seagrave, Seagrave Nursery, Gleadlees, Sheffield, staged in one corner of the hall a group of plants consisting of Palms, Heaths, Primulas, &c. Messrs. G. Bunyard & Co., The Nurseries, Maidstone, Kent, sent a capital collection of Apples and Pears. The Apples consisted of ten large basketfuls and seventy dishes besides and thirty dishes of Pears, the fruit of excellent quality and highly coloured. Messrs. Hiram Shaw & Son, nurserymen, 14, Broad Street Park, Sheffield, staged a capital group of plants, Palms, Crotons, Ferns, &c., neatly arranged.

A first class certificate was awarded to Mr. E. Beckett, The Gardens, Aldenham Park, Herts, for three blooms of Chrysanthemum Sunflower, a magnificent Japanese variety, orange yellow, with long drooping florets.

A luncheon was held in the "Maunche Hotel," at 3 P.M., attended by Judges, exhibitors, Committee and friends. Deputations from Hull, York, and Leeds subsequently had interviews with Mr. W. Holmes and other officials of the National Society with respect to making arrangements as to the next provincial show, and all appeared equally desirous that the Society should proceed to their respective towns. The matter could not, however, be definitely settled until formal invitations had been received and submitted to the National Society's General Committee.

Notes & Gleanings

EVENTS OF THE WEEK.—The Chrysanthemum Shows, which have been so numerous during the past week or two, are now nearly all over, the only two of importance are at Hull to-day (Thursday) and at Pontefract to-morrow (Friday). Messrs. Smail & Co. will hold sales of bulbs and other plants on Monday, November 26th, Wednesday, November 28th, and Friday, November 30th, at 123, Fenchurch Street, E.C.

—— HORTICULTURAL CLUB.—The second monthly meeting and dinner of the session was held at the rooms, "Hotel Windsor," Victoria Street, Westminster, S.W., on Tuesday evening. There was a very large attendance of the members. Mr. Harry J. Veitch occupied the chair. There were also present the Reverends W. Wilks, F. H. Gall, and F. R. Burnside; Messrs. A. Moss, T. W. Girdlestone, E. R. West, G. Bunyard, H. J. Pearson, Alfred Pearson, J. Walker, W. B. May, A. F. Barron, R. B. Cater, W. F. Cooling, P. Crowley, W. J. Jefferies, the Hon. Sec., &c., and after dinner a paper was read by Mr. Geo. Bunyard on "November and December Pears." An interesting discussion, in which Messrs. Veitch, Pearson, Barron, and others took part, followed, and a vote of thanks was accorded to Mr. Bunyard, and the Secretary was requested on behalf of the Club to write a letter to Mr. John Lee expressive of their sincere sympathy with him in his serious illness, and expressing the hope that he would soon again be amongst them.

—— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The usual monthly meeting of the above Society was held at the "Caledonian Hotel," Robert Street, Adelphi Terrace, Strand, on Monday evening, November 12th, Mr. J. Wheeler in the chair. Two new members were elected. The Committee are glad to say that the late annual dinner was a decided success, and it was proposed by Mr. Hudson, and seconded by Mr. G. Wheeler, and resolved, "That the best thanks of the meeting be given to Messrs. Laing and Williams for decorating the dining hall with beautiful groups of plants; to Messrs. Cannell, Lowe, and Chard for cut flowers; to Mr. Thomson of Clovenfords and other friends for fruit for dessert; to Miss Belval and friends for their beautiful music and singing; and the Press for their valuable help in giving such an excellent report of the proceedings." The rules may be had for six stamps on application to W. Collins, 9, Martindale Road, Balham, S.W.

—— WE regret to hear that Mrs. Jane Maria Laxton, the wife of Mr. Thomas Laxton, died at Bedford on the 17th inst., aged fifty-four.

—— IN answer to your correspondent, Mr. Geeson, respecting the quantity of PETROLEUM FOR DESTROYING SCALE ON PEAR TREES, hitherto I have used a wineglassful to a gallon of water, and found it sufficient, but if the trees were badly infested with scale, and required more to kill them, I should not hesitate to use double that quantity without fearing any injury to the bark or buds of the tree thus operated on.—A. PETTIGREW, *Cardiff*.

—— POTATOES AT THE CRYSTAL PALACE SHOW.—Mr. C. Fidler complains of the omission from our report of the above Show of the fact that he was awarded an extra prize for 120 varieties of Potatoes. It is absolutely impossible to record the name of every prizewinner at November shows, and this is so evident to exhibitors as a body that it is seldom any of them make a complaint on the matter.

—— I THINK it a pity that that old fashioned flower the VERBENA

is not grown more generally than it is. We have had a border here about 100 feet long filled with mixed varieties. They stood the cold and wet weather wonderfully well, and were much admired. Some of the varieties are very sweet scented, which is a great recommendation. Good strong plants placed out at the end of May produce the best results, weak spindly plants are of little use.—GEORGE COOKE.

——REFERRING to RHODODENDRONS "N. G." observes:—"The dry weather during the spring prevented Rhododendrons making much growth, and the early varieties set abundance of flower buds, but unfortunately they burst into late growth. R. ponticum and the majority of the hybrids made a strong second growth, so there is but little prospect of a good display of these flowers next season. Azalea pontica and the Ghent varieties, on the other hand, have set well, and the wood was too ripe for them to burst again into growth."

—— PINES AT PARKFIELD, HALLOW, NEAR WORCESTER.—In these well managed gardens there is at the present time as good a house of Pines as could be found in any garden. There are about fifty fruiters, the fruits averaging from 8 up to 9 or 10 lbs., and in one case 11 lbs. This latter weight has been exceeded in previous years. The variety is Smooth Cayenne. The house is a sunk span-roof, about 14 feet in width inside measurement. The age of the plants is just eighteen months from the sucker. Mr. Brockington, the gardener in charge, deserves much praise for what is undoubtedly one of the greatest triumphs in Pine culture.

—— IN the same garden may be seen one of the finest representative displays of CHRYSANTHEMUMS in the western Midlands. About 700 plants are grown on the large-bloom system. The majority of new varieties, or those that are worthy, are added annually. Mr. Lea, the owner, does not care to exhibit, which is the reason they are not more widely known. The plants are arranged on each side of a large span-roofed house, with a raised platform through the house for inspecting the blooms. In this manner the blooms are just brought below the eye. The neighbourhood of Worcester is getting quite a centre for Chrysanthemum growing in the western Midlands, Impney and Hindlip being in the near neighbourhood, with others cropping up. —A. Y.



ROSE PLANTING.

ALTHOUGH general directions are given in all works upon the cultivation of Roses as to the various processes of cultivation, and each calendar of operations tells all whom it may concern that November is the best time for making, arranging, and altering beds, yet as our seasons vary so much of necessity, the time, and indeed the method, of these processes vary. The season may be very wet or it may be very dry; or frost may interfere with operations, and so instructions suited to each year are not out of place.

With regard to the time of planting, I at one time believed that it might with advantage be deferred until spring, and did so in one or two seasons, when I obtained my plants from the nurseryman, and planted them in the spring. I found that very little root action had taken place, and that when I planted and pruned them they seemed to experience a check; so I gave up the practice. I found that there were so many things to be done in the garden at the same time that Rose-planting was apt to be done hastily, and so I returned to the old orthodox time, and am now preparing for my work, and have indeed partly begun it in a small way.

The season has been a very peculiar one. We had on October 3rd a frost which was general with greater or less severity all through the country. This injured to a great extent the autumnal bloom, but did no harm to the plants, while the remainder of the month was so dry, at least in the southern parts of the kingdom, that planting was an impossibility; just as Wheat sowing was prevented in our neighbourhood, and now very heavy rain has come, so that care will have to be exercised as to the time of planting. Let it not be hurried, for planting may take place at any time during the next two months when the weather is favourable.

There will be two kinds of planting carried on doubtless in most gardens—the removal of plants in the garden itself, and the planting of those received from the nurseryman. With regard to the former the ball is in the amateur's own hands. He can choose his day, take up his plants and replant them without let or hindrance. Not so, however, when he receives plants from the nurseryman; they suit their convenience as to the time of sending them, and he must be prepared to receive them. Let nothing induce him to unpack his straw bundle in frosty weather. Roses are so well packed nowadays that they will keep for a long time in the package in which they are sent. Another point equally necessary is not to leave the roots exposed for even an hour. My own practice is to unpack the parcel, having a trench dug ready, and then lay the plants in it, covering the roots up well, and then taking them up one or two at a time and planting them where they are permanently to remain.

In planting I never advise manure to be used, however well decayed. It is impossible to prevent it getting to the roots, and when it does it is apt to create fungus. When a hole is made have ready some good well decayed turfy loam, place some of this in the bottom of the hole, take the roots and spread them out carefully, do not injure the bark of the roots; then shovel in some more loam and tread it down well, and place, if the shoots are at all long, a stake to steady them so as to prevent the wind from loosening the plants in the ground and making a hole into which wet falls and injures the roots. These directions refer to the classes of Hybrid Perpetuals and such summer Roses as an amateur may like to grow, and some of them are very beautiful. With regard to Teas practice will vary in different parts of the country. In the south there is but little need to make any difference between them and the Hybrids, but where this is done they are generally laid under a south wall where they can be covered in severe weather and not planted until April. This year I am enlarging my Tea beds and diminishing the number of Hybrid Perpetuals. The former do well with me, and as a rule they are really the Perpetuals, blooming earlier than any others, and continuing in flower later. This year they have not done so well as autumn bloomers; the cold of October 3rd, and the thick foggy weather which followed it, prevented the expanding of their blooms, but as a rule I am able to cut blooms from them in good order far into November.

One subject always exercises Rose-growers at this season, and that is whether it is worth while to get any new Roses, and if so, what are to be depended on? Of course the answers depends much on whether the amateur is disposed to spend a little money or not. If he be the following may well be added:—Earl of Dufferin, a grand high-coloured flower of good quality and vigorous habit, and very sweet in perfume; Sir Rowland Hill, a remarkably coloured flower, quite distinct, of good habit, the colour a rich claret suffused with crimson; Mrs. John Laing, a beautiful pink coloured flower of good substance and shape; Lady Helen Stewart, a high coloured flower of good quality. I would not recommend Grand Mogul until it has been further tried, for from many quarters I hear it is hardly to be distinguished from Jean Soupert, a flower sent out some years ago. Gloire de Margottin, bright dazzling scarlet, and very free flowering; Miss Ethel Brownlow is a good Tea of novel colour; Madame Hoste is also a fine yellow Tea; and then there are the two little Polyantha Roses, Golden Fairy and Little Dot, the former bright fawn yellow with lighter margin, the latter white with a salmon centre; they are delightful in every way, but when cultivated in pots they form most charming additions to greenhouse or conservatory.

From all appearances it will be some time before we can get on with planting. Here in Kent we have had recently nearly 2 inches of rain, and it seems more to follow. Under these circumstances planting will be impossible.—D, *Deal.*

NOTES ON EARLY ENGLISH HORTICULTURE.

(*Continued from page 286.*)

THE reign of Henry VIII., though certainly not a period of history in which, on the whole, Englishmen can exult, was distinguished by this fact, that it saw the revival of English horticulture, and the re-importation, or introduction, of a great number of foreign plants. These were chiefly fruits, vegetables, and useful or ornamental trees; the garden flowers were few. And it is interesting to note how the botanists and gardeners about this time discovered, by comparison with newly arrived specimens, many plants which had been brought over by the early Crusaders, or still farther back, in the days of the Romans. There had, however, been indications of a coming improvement while Henry VII. reigned. A worthy citizen and haberdasher had published, early in the sixteenth century, his "Chronicle of London," in which, amongst other matters, he discoursed upon the crafts of planting and grafting, the various employments of the seasons, and on a method of his own for growing "perceley," that is, it is supposed, not Parsley, but Cress, in the space of an hour, which seems somewhat marvellous. Lord Cromwell brought into our island several kinds of the Plum about this period. One was the Pendragon, or Perdrigon, of two colours, and much esteemed. Holiushed says that the nobles had a fancy for tree planting, and surrounded their mansions with groves, composed, doubtless, chiefly of our common natives.

The lack of flowers until a later period obliged gardeners to try various expedients to diversify the grounds and please their patrons. So they contrived mounds with spiral ascents, "knots," composed of earth or soils of different colours, mazes, wildernesses, and alleys, or paths set with lines of trees and hedges. By the order of Henry VIII. the Royal gardens of Nonsuch were laid out in a style which made them an object of admiration for centuries, and the

Lilac is mentioned as a novelty. Fruit trees were numerous. The Apricot may have been amongst them, as it was brought over about 1524 by Woolf, gardener to Henry, or as some say, by Mascal. Probably the Nectarine belongs to the same date, but it is not distinguished from varieties of the Peach. Evidently that fruit was freely grown in London gardens before the middle of the century. Mascal is said to have brought over the first Pippins two years later, planting them at Plumpton on the north side of the South Downs. The Golden Pippin, it is supposed, was first reared at Parham Park, also on those downs. Henry's fruiterer, one Richard Haines, is stated to have obtained the Cherry from Flanders and planted them at Sittingbourne, Kent, but we have abundant proof that Cherries were an abundant fruit in England before his time, and in 1540 we read of a Cherry orchard of thirty-two acres, the value of the fruit that year being £1000. But it is likely Haines was introducer of the red Flemish Cherry, as Tusser mentions a red kind as novel, the old English one being black. Though the Quince is attributed to this reign, it had been cultivated before, as one author mentions having seen it planted as a hedge to gardens and vineyards not many years after, which would imply it had been known long enough to become common. The Musk Melon, a native of Tartary, but which came to England through Italy about 1520, Gerard tells us he saw at St. James's Palace and in Lord Sussex's garden near Bermondsey. Next century this was a very favourite fruit, and much cultivated along the banks of the Thames in Surrey.

Turner published a curious book on "Herbes" in 1548 which marks an era in horticultural progress, and records, amongst species of less note, the Sweet Bay, the Spruce Fir, the Cypress, the Pomegranate, the Oriental Plane, the Fig, the Black Mulberry, the Almond, the Stone Pine, Rosemary, Rue, Savine, and Jessamine. To the Almond the attention of gardeners was specially drawn by its habits of early flowering and late fruiting. The latter, they thought, arose from the oily moisture of the species. It is supposed that the original Mulberries were those which Phillips saw at Sion House in 1820 and reported upon. All the timber had crumbled owing to their great age, but the trees were sustained by means of the bark, and they produced both flowers and fruit. Probably there were in England Fig trees, descendants of those which the Romans introduced, though Turner seems to have regarded the species as a novelty, and the White Marseilles variety, certainly planted by Cardinal Pole in 1525, at Lambeth, is commonly said to have started the culture of the Fig once more. A later edition of Turner adds the Walnut, a tree which came slowly into popularity, Rue, Lavender, as arrivals before 1570, and L'Obel at that date mentions doubtful species of Pistacia, Genista, and Cistus. We do not hear of any nursery till after the middle of the sixteenth century, when that of Corbet is mentioned, also called Poynter, at Twickenham. Ben Jonson knew him, and Gerard says he was a most cunning and curious grafter of all manner of rare plants. And the time of trouble that came upon the monasteries put an effectual stop to the monks' quiet pursuits of gardening and illuminating. One of the last notable gardeners of that class was Prior Bolton of Canonbury, at the north of London, who planted many trees in the garden ground there, part of which yet remains open, but the trees have gone, though some were in existence fifty years ago. The worthy old Prior died in 1532.—J. R. S. C.

THE NATIONAL AURICULA AND THE NATIONAL CARNATION AND PICOTEE SOCIETIES.

(Southern Sections.)

It is related of Sir Walter Raleigh that when he was writing his History of England in the Tower, one day looking out of his window he saw an accident. Two of his friends who had also witnessed it came to see him, and related it; their accounts were so opposite that he threw down his pen in despair, saying how was it possible to write history when even he could get no correct account of a matter that happened under his own eyes? With some such feeling have I read Mr. R. Dean's statement with regard to the annual meeting of the above Societies. I rubbed my eyes, wiped my spectacles, and thought I must be dreaming, but I suppose it's all right, only it's very odd. As Chairman of the meeting I wish simply to state the following facts:—

1, That not only was the proposition of holding the Shows in 1889 in connection with the R.H.S. mooted, but I was told there need be no hurry in approaching the Crystal Palace Company until after the next meeting of the Council, when the matter would be settled. 2, That I, foolishly I suppose, imagined that Mr. R. Dean was strongly in favour of our so doing. The Drill Hall is, indeed, spoken of as undesirable if it could be avoided, but he promised if held at Chiswick that he would provide a conveyance at Ealing to take the boxes from Reading, &c., to Chiswick by road. 3, The general feeling of the Committee was in favour of holding the shows in connection with the R.H.S.

Mr. Dean fears that if the reports of meetings was to be left to the officials very incorrect reports would be the the result; his is, at any rate, a proof that it would not be remedied by leaving it in unofficial hands. The personalities which close Mr. Dean's letter may well be left alone, and I do not think they will injure the person against whom they are directed.—H. Honywood D'Ombrain, *Chairman*.



CHRYSANTHEMUMS AT PERRY HILL.

There is a fine display of these beautiful autumn flowers at Messrs. Carter's nurseries just now. Three newly erected houses are devoted to the collection, which is a very large one, and includes many of the novel varieties that Messrs. Carter have imported direct from Japan from time to time. Among the leading varieties very fine are the following:—Mrs. Beale, a very large pure white Japanese, the guard florets in some instances being over an inch in width. James Carter, a charming decorative reflexed variety, the beautiful amber bronze flower being most evenly formed. Mrs. Dunnett, an enormous flower of a rosy blush colour, the points of the petals are quilled and prettily tipped with white. This is a very distinct Japanese. Holborn Beauty, a charming variety in the way of Bend Or, colour bronze. Bronze Queen of England, this variety is now found in all prize groups, it is a grand acquisition. Martha Harding, a rich golden yellow, changing to brown, immense flowers. Prominent amongst older favourites are Baron Beust, Empress of India, Gloria Mundi, Lady Hardinge, Lord Alcester, Mr. Bunn, Mr. George Glenny, Mrs. George Ruudle, Princess of Wales, Queen of England, and Venus.

CHRYSANTHEMUM THUNBERG.

I have taken the liberty of sending a small bloom of Thunberg for your inspection. This has been quite the belle of the season with me, and is a beautiful contrast to the two you have lately given us in the Journal. The enclosed bloom is from a terminal bud, and although I have seen the variety exhibited at several shows this season, for refined beauty the bloom I send surpasses any that I have seen.

With your permission I will shortly say a few words on the damping of Chrysanthemum blooms.—Frank Hopkins, *Walton-on-Thames*.

[The bloom received is a handsome one of excellent colour, and well merits our correspondent's high opinion of it. We shall also be glad to receive his notes on the damping of blooms, as the subject is one of much importance to growers.]

NARROW VINE BORDERS.

A great quantity of the soil used in the formation of many Vine borders is destitute of roots, and good for nothing but keeping moisture. As I am in favour of the roots of Vines being restricted, perhaps you will allow me to give a description of a vinery in its fifth year under what I call root-restriction, and partly on the narrow-border principle. The Vines were planted inside in the usual way in 3 feet of good loamy soil; the outside had the same as the inside, but the roots took to the outside border quicker than to the inside. At the end of the first year's growth, which was splendid, I examined how far the roots had gone into the new soil. They had crossed the new soil and into the old for a considerable distance. Instead of taking care of them I cut off all the ends as they were long and quill-like into the new soil, and did not stop until I found them pretty thickly matted. I gave new soil to the border every year and cut back in the same way as the first year. I have been in places where new soil had to be placed in front of the longest root to make it go faster, but these I consider long underground branches and should be cut back. The Vines are always increasing in strength and fruitfulness. I may say one of the Black Hamburgh bunches weighed over 10 lbs., there were five other bunches on the rod. This is merely stated to show the vigour of the Vine, which I attribute entirely to the above system of root management and not to any particular composition of the soil used, as all it has is a little lime rubbish and wood ashes.—Bon Accord.

FORCING LILY OF THE VALLEY.

As stated by "M. M." at page 418, these are often very unsatisfactory as seen in many private gardens at Christmas time, but I fear he takes a rather too gloomy view. We generally have our first in by about the second week in January, and I daresay the same means would obtain them by Christmas if we felt so disposed. Many gardeners no doubt purchase the roots too soon from the nurseryman, but when ordering ours I always stipulate that they are to be only sent when they can warrant them well ripened. Another mistake is not supplying sufficient moisture. After receiving ours they are immediately potted; if it is not convenient to do so at once they are covered with damp cocoa fibre refuse in the open air. We place eighteen crowns in a 5-inch pot, and after potting they are plunged in cocoa fibre refuse in the open air, and there remain until brought in for forcing. They are taken into the house and supplied with tepid

water through a rose. The next thing is to plunge the pots to the rims in a propagating case, and the crowns are covered with moss. Success or failure will depend upon their subsequent treatment. Every morning give a good supply of water at about 80° or 90°; do not miss a morning. After the crowns have grown about 1½ inch take off the moss, and in about two days place each pot in pans of water on a shelf close to the glass, and take care to keep the pans filled. The night temperature of our house is about 65°. If the above course of treatment is carried out you will secure a spike of flower and a sheath of foliage to every crown. I grew Lilies for Christmas, when they fetched 15s. per pot in Covent Garden.—A. YOUNG, *Abberley Hall Gardens.*

NOTOSPARTIUM CARMICHAELI.

SEVERAL members of the great family of Leguminosæ present examples of apparently leafless plants, and amongst those cultivated



FIG. 53.—NOTOSPARTIUM CARMICHAELI.

under glass in greenhouses or conservatories such are familiar to many amateur gardeners. Notospartium Carmichaeli is an instance of this kind, but not so well known at present, for it has only recently been brought under notice by Messrs. J. Veitch & Sons of Chelsea. It is a New Zealand shrub, of slender habit, with somewhat flattened leafless stems and branches, or with the leaves reduced to scale-like proportions. The neat pea-shaped rosy-purple flowers are borne in dense clusters on the stems as shown in the woodcut (fig. 53). In some districts this no doubt will be found quite hardy, but in any case it should be worth a place in a greenhouse with other plants from the southern hemisphere, and would require the treatment accorded to hardwooded plants.

GRAPES SCALDING.

ONCE more Mr. Bardney has referred to this question, and in two modest columns endeavours to persuade us we are entirely on the wrong scent, also that we have only to follow in his footsteps to insure unbounded success. Now I trust he will not think me dogmatic when I say I still adhere to my argument on this subject. I have read my papers through carefully, and I fail to find where I said it was impossible to scald Black Hamburghs. Such a thing can be accomplished undoubtedly, but I contend not by ordinary culture. My argument may be briefly summed up as follows :—Lady Downe's is more liable to scald than other Grapes grown under the same conditions. I must remind Mr. Bardney that I had not arrived at any illusionary conclusion respecting the scalding of his Grapes. He is certainly to be congratulated on the successful culture of Lady Downe's. How many gardeners can echo Mr. Bardney's words, "That they have not lost more berries than would make two good bunches in eleven years?" I fear very few indeed. I had almost arrived at the conclusion that scalding was not so prevalent in Lancashire as further south, but I suddenly remembered they find it possible to scald Hamburghs as well as Lady Downe's, a feat I should think is rarely accomplished here. Mr. Bardney appears somewhat surprised to find I should accept his conditional admission for what it was worth—viz., that it would be gross carelessness to scald Black Hamburgh as badly as Lady Downe's ; conditionally the scalding of both varieties is due to the same cause. Now perhaps he will remember I have never hinted at the cause further than saying it would require an extra dose of the "same cause" to scald the former as badly as the latter. Mr. Bardney tells me his conditional admission is, "That it is gross carelessness to scald Lady Downe's." This is a verdict from which I must leave gardeners to draw their own conclusions. So far as I am concerned, I respectfully differ. Mr. Bardney in company with Mr. Simpson would look for Black Hamburghs scalding in a vinery where little fire heat was used. I can assure him the houses I mentioned as a case passed through the stoning period absolutely without fire heat, and he would have to look in vain for a single scalded berry of that variety, or any other except Lady Downe's.—JAMES B. RIDING.

CHRYSANTHEMUM SHOWS.

WE have to thank numerous correspondents for notes and reports of Chrysanthemum shows in all parts of the country, but the demands upon our space have been so extensive that we have had to rather severely condense the reports of several excellent exhibitions. Some, indeed, we are reluctantly compelled to reserve until our next issue.

TRURO.

THE first Chrysanthemum Show ever held in Truro was opened by the Mayor (Mr. W. J. Johns) in the Concert Hall on Tuesday, November 6th, at noon, and continued the following day. A large schedule of prizes was offered, and the Society was affiliated with the National Chrysanthemum Society. The expectations of the Committee were fully realised, and the Judges (Messrs. James Murton, Richard Gill, and Archibald Mitchell) were highly pleased with the excellent quality of the exhibits. Among those not for competition we might notice some tall plants sent by Mr. J. C. Daubuz-Kilrow. One of the collection was a very large plant of Sœur Melanie, containing hundreds of perfectly white blooms. Mr. A. Blenkinsop contributed a well arranged group ; also Messrs. Lowry and Laverton. Lady Selborne, trained as a standard, was remarkably good, being heavily laden with flowers. This, together with two other standards, were exhibited by Mr. Laverton. Great praise is due to the Committee for the excellent manner in which the Show was conducted ; also to the energetic Hon. Secretary, Mr. A. Blenkinsop.

PLANTS.—The groups of Chrysanthemums arranged for effect were one of the exceptionally beautiful features of the Exhibition, occupying the whole centre of the hall. Class 1 was that for a group of Chrysanthemums arranged in space not exceeding 100 feet, quality and general effect to be the leading features. There were three groups, and the first honours went to Mr. F. Hearle Cock (gardener, Mr. Bishop) for his exceptionally good collection of dwarf-grown plants. This was the leading feature of the Show, and called forth great commendation. To this collection the Judges awarded the National Chrysanthemum Society's certificate, an honour of which Mr. Bishop may well feel proud. The second prize was given to Messrs. Mill & Tweedie, nurserymen, Truro, for their very large collection, including some extremely choice plants.

The fine collection of Mr. Wm. N. Gill, Truro, occupied nearly the whole length of the hall on the right hand side. He obtained five first prizes in the following classes :—Six specimens large flowered varieties (Japanese excluded), three specimen ditto, single specimen ditto, six specimens Japanese varieties, three specimens Pompon varieties. Mr. A. Laverton was first for single specimen Japanese variety. Mr. Gill's group contained some good plants, his finest being Margot, Peter the Great, Mrs. Dixon, Princess Beatrice, incurved ; and a very large plant well-grown of Belle Navarais, white Pompon ; Dr. Macary, and Lord Wolseley were exceedingly good specimens.

The only exhibit in the amateur classes was a fairly good plant of Soleil Levant, grown by Mr. G. Gradedge, Truro, to which a first prize was awarded. It is to be regretted that the competition among amateurs was so slight. Perhaps the Committee, by offering more liberal prizes another year, may greatly increase the interest in this section.

CUT BLOOMS.—In the class for twenty-four large flowered blooms, and twenty-four Japanese blooms in not less than eighteen distinct varieties of each kind, Mr. Prideaux Brune, Padstow (gardener, Mr. W. Brown), won a well-deserved first, his blooms undoubtedly being the finest in the Show. They were of good size, rare quality, and exquisite colour. The Judges awarded the National Chrysanthemum Society's certificate to Mr. W. Brown for this magnificent display. The varieties shown included :—Large flowered : Empress of India, Gloria Mundi, Alfred Salter, Christine, Novelty, Mrs. Sharpe, Emily Dale, very fine ; Lord Wolseley, Queen of England, large ; Golden Empress of India, noble flower ; Mr. Bunn, Golden Christine, Lady Hardinge, Reine des Blanches,

Guernsey Nugget, and Lord Alcester, good. Japanese: Baronne de Prailly, Red Gauntlet, Fair Maid of Guernsey, Amy Furze, Soleil Levant, M. Ivon, Ethel, Roseum superbum, M. N. Davis, L'Incomparable, Madame Audiguier, Sultan, Golden Dragon, very good; Comte de Germiny, Triomphe de la Rue des Châlets, splendid flower; L'Adorable, fine; Jeanne Délaux, one of the best; and Mons. Ardène. Mr. W. Lovering, St. Austell, was second. Incurved blooms, twelve distinct varieties. Here again Mr. Brune took first prize, the second being awarded to Mr. W. N. Gill. The lovely display of blooms included the following varieties:—Novelty, Alfred Salter. Inner Temple, Queen of England, Golden Empress of India, very large; Emily Dale, grand show flower; Empress of India, Golden Beverley, White Beverley, Cherub, Lord Wolseley, and Guernsey Nugget.

Twelve Japanese blooms, distinct varieties.—This class produced keen competition; although Mr. Brune scored another first Mr. F. Hearle Cock may well compliment himself on being a good second. Mr. Brune's blooms were Val d'Andorre, grand specimen; M. John Laing, Comte de Germiny, Mdlle. Lacroix, Soleil Levant, Red Gauntlet, very fine; Jeanne Délaux, Golden Dragon, Fair Maid of Guernsey, large; Triomphe de la Rue des Châlets, Comtesse de Beauregard, and L'Adorable, very good. Mr. F. Hearle Cock's twelve were L'Adorable, Soleil Levant, Golden Dragon, lovely bloom; Comte de Germiny, Meg Merrilies, Balmoreau, Elaine, Japonais, Marguerite Marrouch, Madame J. Laing, very fine; Val d'Andorre, immense bloom, and Mdlle. A. Brunel.

Twelve reflexed in not less than six varieties added another first to Mr. Brune's honours. His blooms were the admiration of all, being very finely grown and of good substance. The varieties shown were King of Crimsons, Mrs. Forsyth, Christine, good bloom; Cloth of Gold, rich colour; Cullingfordi, and Mdlle. Tezier. Six large-flowered Anemone blooms.—The varieties shown by Mr. Brune were Lady Margaret, Mrs. Pethers, good; Gluck, Louis Bonamy, Marginatum, and Princess Charlotte.

Six Japanese Anemone blooms as exhibited by Mr. Brune (first prize) were Madame Cabrol, Ratapoil, and Sœur Dorothé Souille, two of each. Six Pompons, distinct, three flowers of each, to be shown with foliage. This completed Mr. Brune's long list of successes (seven first prizes). The bunches were exceedingly fine, and the blooms very large. The varieties were Aurora Borealis, Sparkler, Madame Elise Dordan, very pretty, compact; Golden Madame Marthe, and Marabout, good show flower. A special prize was awarded to Mr. F. Hearle Cock for twenty-four Japanese blooms, distinct varieties.

Amateur Classes.—All the first prizes were taken by Mr. G. Pappon, Flushing, whose blooms were very fine; Mr. Killstone gained three seconds, the other falling to Miss Hockin, Flushing. The classes were twelve large-flowered, distinct varieties; six ditto; twelve Japanese, distinct, and six ditto.

Classes open to Ladies only.—Miss Michell, Glan Mor, had the best arranged vase of Chrysanthemums and Maidenhair Fern, and was awarded the first prize, Mrs. Lowry being second. Miss Hunkins' collection of autumn leaves, flowers, and berries, grown out of doors, in garden or field, was exceedingly good and much admired. This also received a first prize.

In the same room Messrs. Lucombe, Pince & Co., Exeter, had an exceptionally fine display of Apples and Pears, containing sixty varieties. Among the dishes specially worthy of notice were Tibbett's Pearmain, to which had been awarded the certificate of the National Apple and Pear Conference, the Dartmouth Crab, Lord Derby, King of the Pippins, and others. Some of the Pears were of remarkable size, and the whole collection was unique.



Fig. 54.—CYCNOCHES CHLOROCHILON. (See page 462).

DEVIZES.—November 13th.

This Exhibition is always held in connection with a bazaar in aid of the Devizes Benevolent Society, and takes place in the Corn Exchange, the arrangements being, as usual, carried out by Mr. Thomas King, Devizes Castle Gardens. As indicative of high culture it may be stated that the exhibits were of a very meritorious character; the trained plants were equal to, if not superior, to any at the Royal Aquarium. The promoters of the Devizes Show deserve every encouragement, for they offer handsome prizes with a view of drawing exhibitors with the best flowers.

Plants.—The best four large-flowered varieties came from Mr. Hale, gardener to C. N. May, Esq., The Elms, Devizes, who had admirably grown and flowered examples fully 4 feet across of Empress of India, George Glenny, Mrs. Dixon, and Lord Alcester. Second Mr. Clack, gardener to C. E. Colston, Esq., Roundway Park, Devizes, his two best specimens being Barbara and Mrs. G. Rundle, but they fell far short of Mr. May's in the matter of quality. Mr. May also had the best three of Mrs. George Rundle, Mr. Dixon, and George Glenny, staging superb

specimens of each, grandly grown and flowered. Mr. Clack was second.

With four specimens of Japanese varieties Mr. May was again first with very finely developed specimens, consisting of Blanche Fleur, Bouquet Fait, Soleil Levant, and Madame Bertie Randatler. Mr. Clack was again second, his best specimens being Madame de Sevin and Madame Bertie Rendatler. Pompons in fours were a good feature also, but Mr. May's were far away the best ; he had excellent examples of Mdlle. Martha, its golden variety Sœur Melanie and Black Douglas. Second Mr. Clack.

Cut Blooms.—These were remarkably fine and well finished. The best twenty-four, not less than eighteen varieties, came from Messrs. W. & G. Drover, nurserymen, Fareham, who had finished examples of Lord Alcester, Alfred Salter, Empress of India, Queen of England, Golden Queen of England, Lord Wolseley, Jeanne d'Arc, Princess of Wales, Nil Desperandum, and Mr. W. Shipman. Second Mr. J. Horsefield, gardener to Lord Heytesbury, Wiltshire, who had some remarkably good blooms also, his leading flowers being Empress of India, Jeanne d'Arc, Golden Empress of India, Queen of England, Bronze Queen, Mrs. W. Shipman, Mrs. Heale, Jardin des Plantes, and Alfred Salter. The best twelve incurved, distinct, were staged by Mr. W. Thomas, gardener to W. Marshall, Esq., Taunton, who had finely finished blooms of Golden Queen of England, Jeanne d'Arc, Baron Beust, Lord Wolseley, Mrs. Heale, Lady Hardinge, Golden Empress, Prince Alfred, Jardin des Plantes, Queen of England, Princess of Wales, and Venus. Second Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Wilts. There was but one exhibitor of twelve varieties shown with 4 inches of stem and foliage, and here Mr. May was again first with excellent blooms of Empress of India, White Venus, Lord Wolseley, Jeanne d'Arc, Nil Desperandum, Mr. Bunn, Golden Empress, and Princess of Wales. The Japanese varieties were a great feature, and they were numerous also. Messrs. W. & G. Drover had the best twelve, very fine, consisting of Boule d'Or, Marguerite Marroueh, Gloriosum, Belle Paule, Baronne de Prailly, Jean Delaux, Edwin Molyneux, Ralph Broeklehank, Criterion, Meg Merrilies, Madame Baco, and Avalanche, very fine. Second Mr. G. Inglefield, with a very good lot also, his leading blooms being Madame C. Audiguier, Baronne de Prailly, Meg Merrilies, Mons. Freeman, Boule d'Or, and Mons. Brunet. The best stand of twelve reflexed varieties came from Mr. May, Amy Furze being particularly fine, also King of Crimsons, Chevalier Domage, Cullingfordi, Mrs. Forsyth, Dr. Sharpe, Golden Christine. Second Mr. W. Allen, gardener to Sir C. Russell, Bart., M.P., Swallowfield, Reading. Anemone flowered varieties also were a good feature. Here Mr. May was again first with some very good blooms, the varieties being Lady Margaret, Fabian de Mediana, Sœur Dorothée Souille, Gluck, and Mrs. Pethers. Second Mr. W. Thomas. Baskets of hardy autumn foliage and berries were a charming feature, and were numerously shown, being arranged in exquisite taste ; the best came from Mr. Thomas Lewis, Devizes, Miss K. J. Medlicott being second.

Handsome prizes were offered for Chinese Primulas in pots. A very fine lot indeed were shown by Mr. C. N. May, giant plants in 8-inch pots, grandly grown and bloomed. Messrs. Pope & Sons, Great Western Arcade, Birmingham, were second with smaller plants, but good quality of bloom. Mr. Clack had the best six plants. Mr. F. Williams, Devizes, being second. Mr. W. Rose, Devizes, has the best three plants.

There was also a class for twenty-four blooms of Primulas, shown on stands in the same way as Pansies. Messrs. H. Pope & Sons were first, and Mr. Clack second. A first-class certificate of merit was awarded to the new white Japanese Avalanche, shown in fine condition by Messrs. W. & G. Drover.

WELLS.—November 13th and 14th.

This comparatively young Society has made very rapid progress, and may now safely claim to have attained to the front rank. Classes are provided for plants in variety, cut flowers, and fruit, and in nearly every instance the competition was keen and the exhibits of good quality. Great interest is taken in, and good support given to the Society by the inhabitants of Wells and district, and there was no lack of subscribers and visitors in spite of the unfavourable weather on the opening day. Mr. A. G. Andrews is the Honorary Secretary, and this gentleman was again ably assisted in the management and arranging of the Show by the Honorary Treasurer, Mr. R. Isgar, and a small Committee.

Fairly liberal prizes were offered for groups of plants to consist chiefly of Chrysanthemums, occupying a space not exceeding 8 feet by 4 feet. Of these there were four in competition, all being highly meritorious. Mr. J. B. Payne, gardener to the Lord Bishop of Bath and Wells, was well first, his Chrysanthemums, notably Belle Paule, Golden Dragon, Madame Laing, Meg Merrilies, Fair Maid of Guernsey, Balmoreau, Val d'Andorre, Golden Empress, and Alfred Salter, being remarkably fine. The front of the group consisted chiefly of Crotons, Epiphyllums, Eucharises, and Ferns, and altogether a very rich display was made. Mr. T. Wilkinson, gardener to W. C. Tudway, Esq., also had a capital lot of plants, but the quality of the blooms was not so good as those in the first prize group. Equal thirds were awarded to Mr. E. Stokes, gardener to N. McLean, Esq., and Mr. W. McKenzie, gardener to J. H. Brown, Esq., the Chrysanthemums shown by the last named being extra good, but Mr. Stokes had the most imposing group. The best six trained plants of incurved varieties were shown by Mr. Chislett, gardener to Mrs. Rees Mogg, Glastonbury, among these being excellent specimens of Mrs. Rundle, Pink Venus, Mrs. Dixon, and Mr. G. Glenny. The same exhibitor was also first for Japanese varieties, the best in this instance being Bouquet Fait, Dormillon, Nuit d'Hiver, and James Salter. The first prize for six plants, to include three Pompons, were staged by Mr. J. B. Payne, among these being well flowered specimens of Mdlle. Laeroix, Fremy, and Bouquet Fait. Mr. W. Potter, gardener to A. Colson, Esq., was awarded the first prize for a single specimen, winning with a well flowered neatly trained plant of Sunset. Mr. Chislett was second with a beautifully flowered plant of Mrs. G. Glenny, and Mr. J. Gardener was third. The best four table plants were staged by Mr. J. B. Payne, Mr. T. Wilkinson being second, and F. J. Clark, Esq., Street, a good third. The same positions were occupied by these exhibitors in the class for two fine foliaged plants. Mr. Payne was also first with six Primulas, his plants being well flowered and fresh. Mr. E. Stokes was second, and Mr. Gregory third. Mr. Payne was first for double Primulas, and Mr. J. Gardner second.

Cut blooms were both numerous and good. The premier class was for twenty-four distinct varieties, twelve incurved and twelve Japanese. Mr. B. Payne was well first, having grand blooms of Queen of England, Golden Queen of England, Alfred Salter, Jardin des Plants, Mrs. Halliburton, Jeanne d'Arc, Prince Alfred, Princess Beatrice, Golden Empress of India, Princess of Wales, and Mrs. W. Shipman, the Japanese being Golden Dragon, Madame C. Audiguier, Fair Maid of Guernsey, Val d'Andorre, Mdlle. Laeroix, Belle Paule, Gloriosum, Mrs. Laing, J. Délaux, Meg Merrilies, Mr. Garnar, and Grandiflorum, all large and fresh. Equal seconds were awarded to Mr. W. A. McKenzie and Mr. T. Wilkinson, both having a fine lot of blooms, marred, however, by three or four bad ones. M. J. M. Pigny and Ralph Broeklebank were well shown by the former, and among Mr. Wilkinson's were fine blooms of M. Bernard, Golden Dragon, M. Freeman, and Madame Baco. The third prize was awarded to Mr. J. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, the Japanese varieties in this instance being rather weak. With twelve incurved varieties Mr. J. B. Payne was again well first, among these being extra fine blooms of Queen of England, Alfred Salter, Bronze Queen of England, and Princess of Wales. Mr. J. Bowerman was a good second, and Mr. T. Wilkinson third. The prize winners with twelve Japanese varieties were Messrs. Payne, W. M. McKenzie, and Mr. G. Chislett, who received the awards in the order named. A pretty stand of blooms gained Mr. Payne the first prize for Anemone flowered varieties, the best of these being Bacchus, Ratapoil, Sœur Dorothée Souille, Mdlle. Cabrol, Lady Margaret, and Fabian de Mediana. Mr. Payne was the only exhibitor of Pompon varieties, and his blooms fairly deserved the award of first prize. Amateurs made quite a good display, the most successful amongst these being Mr. J. Gardener, Wells, and Mr. J. Mundy, Street. The competition was good with baskets or vases of hardy foliage and fruit, several ladies displaying great taste, but the vases of Chrysanthemums and bouquets were not so good.

The display of fruit was far superior to that brought together at previous shows, good quality prevailing throughout. In the class for black Grapes Mr. J. H. Stride, gardener to J. Allen, Esq., was placed first for small but perfect bunches of Gros Colman, Mr. Payne being second, and Mr. J. Bowerman a very close third, both staging good Alicante. For any white Grape Mr. J. Bowerman was well first with well coloured Museat of Alexandria, Mr. Payne being a good second with the same variety. Mr. Bowerman staged a capital dish of Pitmaston Duchess in the class for a dessert Pear, and was first, Mr. Wilkinson being second with Doyenné du Comice. Culinary and dessert Apples were plentiful and good. The best three dishes of the former were staged by Mr. J. B. Payne, these consisting of Warner's King, Peasgood's Nonesuch, and Dumelow's Seedling, all large and of good form and colour. Mr. E. Stokes was second. Mr. J. Bowerman was first for three dessert varieties, these consisting of Blenheim Pippin, King of the Pippins, and Queening, all model fruit. Mr. Payne was a good second. Messrs. Payne and Bowerman were also the prize winners with Tomatoes. Messrs. Brown & Son, Wells, arranged a fine collection of Apples, Pears, Plums, Medlars, Tomatoes, and Gourds, not for competition, and this was highly commended. The same firm had a very pretty collection of Ivies in pots.

WATFORD.

The third annual Exhibition of this flourishing Society was held in the Agricultural Hall on the 13th and 14th inst. Starting this year with a balance in hand of over £20, the Committee slightly increased the number of the prizes, and they have good cause to be satisfied with the result of their efforts, for the Show was one of the best held this season. Taken collectively the Exhibition exceeded the good all-round quality of last year, although there was a slight falling off in the trained plants. The cut blooms, however, exceeded in size and quality those of any preceding year. Mr. Beckett, gardener to H. H. Gibbs, Esq., Aldenham Park, Elstree, was invincible in all classes in which he competed. No doubt the cut blooms and plants of this exhibitor in previous years have helped to stimulate others in their endeavours to excel.

Cut Blooms.—In division 1, for twenty-four incurved blooms, distinct, open to the United Kingdom, Mr. Beckett was a good first with a fine stand of flowers, comprising :—Back row—Golden Queen of England, Jeanne d'Arc, Prince Alfred, Golden Empress, Bronze Queen of England, Princess of Wales, Lord Wolseley, Lord Alcester. Middle row—Mr. Bunn, Queen of England, Empress of India, John Salter, Alfred Salter, Jardin des Plantes, Baron Beust. Front row—Angelina, Barbara, Beauty, Mr. Brunlees, White Venus, Princess Beatrice, Mrs. Heale, and Venus. Princess of Wales in this stand was a magnificent

bloom, the best incurved in the Show. Mr. E. Sanderson, Harlesden, Willesden, was second, with very even stands of flowers, well finished, but not so large as the preceding. Third Mr. Cox, gardener to J. Trotter, Esq., Brickenden Grange, Hertford. The succeeding class for a similar number of Japanese was well filled, making a good display. Mr. Beckett was easily first, showing some of the best blooms he has ever staged ; they were :—Back row—Album Fimbriatum (very fine), Baronne de Prailly, Carew Underwood, Marguerite Marrouch, Mdlle. Lacroix, Madame C. Audiguier, Boule d'Or, and E. Molyneux. Middle row—Soleil Levant, Sceptre Toulousain, Mrs. J. Wright, Sunflower (grand), Jeanne Délaux, Yellow Dragon, Fair Maid of Guernsey, and Sarah Owen. Front row—Madame Baco, Japonais, Val d'Andorre, M. Freeman, Florence Percy, Roi des Japonais, Criterion and La Triomphante. Mr. Cox was second, and Mr. Brown, gardener to R. Henty, Esq., Langley House, Abbots Langley, third.

For twelve incurved Mr. Sanderson secured the first position with fine blooms ; Mr. Mundell, gardener to Lord Ebury, Moor Park, Rickmansworth, was a good second with large flowers, but rather uneven ; third, Mr. Rumbold, gardener to G. Lake, Esq., Bushey House, Bushey. For the same number of Japanese Mrs. Heasman, gardener to Mrs. Brightwell, was first, Mr. Mundell second, Mr. Rumbold third. With six incurved blooms, one variety, Mr. Beckett was first with large and deep flowers of Princess of Wales ; second, Mrs. Sanderson with Princess of Teck ; third, Mr. Mundell. Eight competitors staged six Japanese blooms of one variety, and all were good. Mr. Beckett was placed first with very fine Avalanche, Mr. Henty second with Boule d'Or, and third Mr. Cox, showing Ralph Brocklebank. Mr. Mundell in this class spoiled his chance of success by staging a very small Madame C. Audiguier, his other five flowers being excellent examples.

In Division 2, open to members only, the competition was strong in all classes. For twenty-four incurved Mr. Beckett was again first, staging flowers very similar to those enumerated in the open class ; Mr. Sanderson second, and Mr. Brown third. For twenty-four Japanese, distinct, Mr. Beckett was also first with excellent stands. With twelve incurved Mr. Mundell was first, and for the same number of Japanese Mr. Kingley, gardener to E. Mawley, Esq., Berkhampstead, won first honours with bright blooms, Mr. Mundell being second.

E. Mawley, Esq., was also first for twelve Japanese in division 3, where not more than two gardeners are employed, and Mr. Layzell, gardener to the Rev. F. K. Gibbs, second. Half-guinea prizes were offered for the best Japanese bloom and the best incurved bloom in the Show, both of which Mr. Beckett was successful in winning. In the former a splendid flower of Album Fimbriatum in his twenty-four stand was selected for the honour, although Sunflower in the same stand was equally good. The best incurved was Princess of Wales, also in this exhibitor's twenty-four stand, a splendid flower of large size and depth, finely finished.

Groups of plants arranged for effect were arranged round the sides of the hall, the competition in the various divisions being very good. For a semicircular group in a space not exceeding 50 feet Mr. Kirby was first with a very good arrangement, his flowers also being large and fresh. Second, Mr. Dinsmore, gardener to T. F. Blackwell, Esq., Harrow Weald. His group contained good plants, but the arrangement in front was too high. In the members' division for a similar sized group Mr. Barnes, gardener to C. R. Humbert, Esq., Watford, was easily first with good plants. Second, Mr. Cox, gardener to O. Thompson, Esq., Bushey Heath. Mr. Layzell was first for a 25-feet group ; Mr. Moore second.

Trained Plants.—These were rather below last year's standard. Mr. Beckett is first for three dwarf trained specimens ; Mr. Wilson second ; and for three Japanese Mr. Beckett again obtained the first position.

Fruit, plants, and other exhibits were numerous, and the Society was fortunate in having fine weather on both days, the Show being patronised by nearly 4000 visitors, which must be highly gratifying to Mr. C. R. Humbert, the Hon. Secretary, and his hard-working Committee, whose arrangements throughout were excellent.

KENT COUNTY.—November 13th and 14th.

A new Society was started this year under the above name, and the first Show was opened on Wednesday, the 13th inst., in the Rink, Blackheath. The promoters had ample reason to be satisfied with the result of their efforts, as, though there was room in the spacious and convenient hall for more exhibits, the quality of the majority left nothing to be desired. Near the walls were placed the groups of Chrysanthemums and miscellaneous plants, the cut blooms occupying two rows of tables in the centre of the hall, table plants, stands of flowers, and other exhibits being arranged with them.

The cut blooms were of admirable quality, and the competition in some of the leading classes was very keen. This was especially the case in that for twenty-four blooms, eight each of Japanese, incurved, and reflexed, distinct, the three prizes being presented by the President, F.W. Prior, Esq., Gordon House, Blackheath. C. C. Shea, Esq., The Elms, Foots Cray (gardener, Mr. W. Packman) won first honours, but he was very closely followed by W. C. Pickersgill, Esq., Blendon Hall, Bexley (gardener, Mr. F. Moore), who had an exceedingly fine bloom of Stanstead White amongst his Japanese. The third place was taken by Mrs. Arbuthnot, Bridgen's Place, Bexley (gardener, Mr. J. Mitchell). These three collections making an interesting display. Mr. Packman also had the best twenty-four Japanese blooms, and twelve reflexed, all fresh and beautiful blooms. M. Hodgson, Esq., Shirley, Croydon (gardener, Mr. H. Shoesmith) took the first place with eighteen incurved blooms, very clean, fresh, solid blooms, Messrs. Packman and Leadbetter following. Cut blooms in several other classes were well shown, and some excellent non-competing stands were staged by T. Wickham Jones, Esq., South Norwood. Groups of Chrysanthemums furnished a considerable attraction, F. P. Preston, Esq., South Bank, Blackheath, winning first honours, while the extensive and well arranged non-competing groups from Messrs. Davis & Jones, Camberwell, and Messrs. J. Laing & Sons, Forest Hill, secured the Society's special award of merit. The Hon. Secretary, Mr. H. A. Needs, with the Committee, of which Messrs. Norman Davis and J. H. Laing are prominent members, may be congratulated on having made a good beginning.

BRIGHTON.—November 13th and 14th.

The sixth annual Exhibition of the Brighton and Hove Chrysanthemum Society was held in the Pavilion. The arrangements were excellently managed, under the superintendence of Mr. Mark Longhurst, the courteous Secretary, assisted by an efficient Committee.

Cut blooms were staged to the number of over 1100, and were of good average quality, the Japanese being heavy and of good quality. Incurved varieties showed a roughness and want of finish which is somewhat prevalent this season. The great class was for forty-eight large flowered varieties, half to be incurved and the remainder Japanese, all to be distinct. This is generally a difficult class to fill, yet it on this occasion brought six competitors. The first prize was awarded to Messrs. W. and G. Drover, nurserymen, Fareham, Hants, the Japanese being the best in quality, the incurved being rather small in the front row ; the back and middle rows contained some handsome blooms. The names were :—Incurved :—Back row—Empress of India, John Salter, Golden Empress, Queen of England, Golden Queen of England, Lord Alcester, Princess of Wales, Guernsey Nugget. Middle row — Mrs. W. Shipman, Lady Hardinge, Lord Wolseley, Alfred Salter, Mr. Heale, Prince Alfred, Empress Eugénie, Nil Desperandum. Front row—Lady Slade, Venus, Cherub, Jeanne d'Arc, Nonpareil, Princess Teck, Jardin des Plantes, and Prince of Wales. Japanese—Back row—Madame Baco, Margaret Marrouch, Boule d'Or, Belle Paule, Edwin Molyneux, Gloriosum, Baronne de Prailly, Fimbriatum. Middle row—Album Fimbriatum, Madame C. Audiguier, Meg Merrilies, Ralph Brocklebank, Avalanche, Carew Underwood, M. J. M. Pigny. Front row—M. Freeman, Mrs. J. Wright, M. W. Holmes, Balmoreau, Criterion, Jeanne Délaux, Maggie Mitchell, and Val d'Andorre. Second, Mr. J. Hopkins, gardener to R. Thornton, Esq., J.P., High Cross, Framfield. Third, Messrs. W. Ray & Co., Mount Pleasant Nursery, Green Street, Siltingbourne,

For twenty-four incurved, distinct, there were five competitors. A singular occurrence took place in this class The stands which should have been placed second and third were disqualified, owing to their containing duplicate blooms, in one instance of Queen of England and the other of Empress of India. Mr. J. Hopkins was placed first for medium sized blooms, fairly well finished. Back row—Lord Alcester, Bronze Queen of England, Jeanne d'Arc, John Salter, Queen of England, Lord Wolseley, Empress of India, Alfred Salter. Middle row—Princess of Wales, Golden Queen of England, Venus, Cherub, Mrs. W. Shipman, Golden Empress, Bronze Jardin des Plantes, Princess Beatrice. Front row—Baron Beust, Lady Hardinge, Mabel Ward, Prince of Wales, Mr. Bunn, Sir Stafford Carey, Princess Teck, Nil Desperandum. Mr. M. Russell, gardener to Dr. C. F. Lewis, Henfield, Sussex, small neat blooms. Six competed for twenty-four Japanese distinct, making in all a good show. Messrs. W. & G. Drover again occupied the leading position with heavy, even, and fresh blooms, but only by a very few points. The varieties were :—Back row—Mdme. Baco, Mdlle. Lacroix, Boule d'Or, Edwin Molyneux, Avalanche, Ralph Brocklebank, Meg Merrilies, Maggie Mitchell. Middle row—Album Fimbriatum, Belle Paule, M. J. M. Pigny, Mdme. C. Audiguier, Gloriosum, Fimbriatum, Baronne de Prailly, M. H. Elliott. Front row—Gorgeous, Jeanne Délaux, Margaret Marrouch, Criterion, Carew Underwood, Japonaise, L'Adorable, Mrs. J. Wright. Mr. T. Glen, gardener to Mrs. Montefiore, Worth Park, Crawley, was a close second. Third, Mr. G. Duncan, gardener to S. T. Lucas, Esq., Warnham Court, Horsham. Of twelve incurved, nine boxes were staged, Mr. C. Fowler, gardener to Mrs. Hall, Barrow Hill, Henfield, medium size blooms, even and finely finished. Mr. W. Jupp, gardener to G. Boulton, Esq., Torfield, Eastbourne, was second with larger blooms, but not of such good form, and Mr. C. Sayers, gardener to Mrs. Cook, The Hall, Uckfield, third.

Mr. C. Fowler staged the best twelve Japanese amongst eight competitors — large, even, fresh blooms of Madame C. Audiguier, M. Délaux, M. J. M. Pigny, Carew Underwood, Elaine, Belle Paule, Marguerite Marrouch, Madame Laing, Thunberg, Jeanne Délaux, Soleil Levant, and Criterion. Mr. J. Snow, South Park, Wadhurst, was second with larger blooms not quite so fresh. Mr. F. Godby, gardener to Dr. Withersmore, The Oaks, Burgess Hill, was third. Nine staged six incurved, distinct. Mr. C. Fowler was again first with medium-sized even fresh blooms ; second Mr. Jupp with larger, but rougher specimens ; Mr. Snow third. For six Japanese, distinct, Mr. Snow was first ; second Mr. F. Godby, third Mr. C. Fowler, all staging well. Messrs. Drover had the best six Anemones, full solid blooms, with the centres well up—Jean Marty, Minnie Chate, Lady Margaret, Miss Annie Lowe, Mrs. Pethers, and Margouline. Mr. Snow was second with large blooms, but the centres not so well up. Messrs. Drover again occupied leading honours for six reflexed amongst six exhibitors with substantial blooms of Amy Furze, Mdlle. Madeleine Tezier, Culliugfordi, Golden and Pink Christine, and Cloth of Gold ; Mr. F. Godby second. Mr. Snow staged Queen of England, large, but rather flat, for six of any incurved variety ; Mr. M. Russell second with fresh blooms of Golden Empress, small and bad centres ; Mr. C. Fowler with Mrs. Heale took the third place. Eight stands of six blooms of any one variety of Japanese were staged,

Mr. T. Glen took first honours with excellent specimens of Mdlle. Lacroix; Mr. Snow second with the same variety; Mr. G. Coleman, nurseryman, West End, Henfield, was third with Madame C. Audiguier, small but fresh. Mr. G. Russell staged the best twelve Pompons, three in a bunch with foliage, a fine lot, the best Rubrum Perfection, Marabout, Comte de Morney, Mdlle. Elise Dordan, and Briolis, Antonius and Marguerite de Coi as Anemone Pompons; Mr. G. Duncan second with a good lot; Mr. G. Coleman third. For the best two blooms, one Japanese and one incurved, shown in glasses, Mr. J. Hopkins was first with Empress of India and Fair Maid of Guernsey, good. The best bouquet of Chrysanthemums with any foliage was staged by Mr. Rupert Miller, Southdown Nursery, Shoreham. Mr. M. Kent, 4, Campbell Road, Brighton, had the best stand for table decoration, a light arrangement.

Specimen plants were not of a high order of merit, being small, not too freely flowered, the best four plants coming from Mr. Meachin, gardener to Mrs. Armstrong, Woodslea, Withendean. Standards are made a feature at Brighton. The heads range from 2 to 3 feet across, and about that high are generally freely flowered, this time were rather stiffly trained, the best four standards coming from Mr. J. Hill, gardener to M. Wallis, Esq., Springfield, Withdean; second, Mr. A. Scutt, gardener to T. Jenkins, Esq., Franklands, Burgess Hill. Mr. Hill staged the best single specimen standard, one of Roseum Superbum, freely flowered. Mr. Meachin staged the best four pyramids about 3 feet high. A first prize of £5 was offered for a group of Chrysanthemums 100 square feet. Mr. Bunny, gardener to J. Campion, Esq., Danny Park, Hurst, a sloping bank of plants freely flowered, grown in bush fashion was used, which present a mass of small flowers, but lacked the quality of the groups as seen at the metropolitan exhibitions. Mr. J. Turner, gardener to Major Way, Wick Hall, Hove, was second with a similar group, not quite so good in quality.

Fruit made a good show, capital Apples and Pears being staged, the best four dishes of the former dessert varieties and the same number of culinary sorts, while much the best four dishes of dessert Pears was also staged by Mr. C. J. Goldsmith, gardener to Mrs. C. A. Hoare, Kelsey Manor, Beckenham, was easily first in all classes with fine fruits. Mrs. Goldsmith was also first for three bunches of white Grapes with Muscat of Alexandria in good condition. For the same number of black bunches there were nine competitors, Mr. J. Buckstone, gardener to J. Butler, Esq., The Laurels, Withdean, leading with Alicante, good bunches, medium sized berries, and well finished. Vegetables and miscellaneous exhibits were numerous and of excellent quality.

WINCHESTER.—November 13th and 14th.

The Guildhall was the site chosen as usual for the annual Exhibition of Chrysanthemums, fruit, &c. Plants were staged in capital condition by Mr. W. Joy, Mr. Wills, Mr. J. Kaines, and Mr. F. Smith. For a group of Chrysanthemums Mr. G. Wareham was an easy first; Mr. G. Sergant following.

Cut blooms constituted the leading part of the Exhibition, the competition in most classes being keen, and the quality good throughout. The leading class was that for forty-eight, twenty-four to be incurved or reflexed in not less than two blooms of any variety, and the same number of Japanese. The first prize was a challenge cup presented by the Mayoress and ladies of Winchester, the conditions being that it should be held by the winner for one year only, remaining the property of the Society. Three competitors entered the list. The verdict of the Judges, after much deliberation, was given in favour of Mr. Neville, gardener to F. W. Flight, Esq., Twyford, Winchester. The varieties in Mr. Neville's stand were as follows, the incurved being of medium size in the back and middle rows, while the front row was small, but beautifully finished:—Golden Queen of England (2), Princess of Wales, Golden Empress, Queen of England, Bronze Queen of England (2), Lord Alcester, Empress of India, Jeanne d'Arc, Lord Wolseley, Alfred Salter, Nil Desperandum, Golden Empress, Prince Alfred, Venus, Barbara, Mrs. Heale (2), John Salter, Mrs. W. Shipman, Hero of Stoke Newington, and Mr. Brunlees. Japanese:—Edwin Molyneux (2), Val d'Andorre, L'Or du Japon (2), Carew Underwood, Gloriosum, Madame Dubrueil, Madame C. Audiguier (2), Mrs. J. Wright, Madame Laing, Avalanche (2), M. Brunet, Buffalo Bill, Duke of Berwick, Soleil Levant, Maiden's Blush, Mr. Garnar, Stanstead White, Marguerite Marrouch, Thunberg, and Mr. W. H. Benbridge. The back row in Mr. Molyneux's stand of incurved blooms were especially heavy and well finished; the Japanese were throughout large, well coloured, and arranged. Messrs. W. & G. Drover, The Nurseries, Fareham, were third.

For twenty-four blooms, not less than eighteen varieties, Mr. Trinder, gardener to Sir H. St. Mildmay, Dogmersfield Park, Winchfield, was easily first, the Japanese large and fresh, the incurved were of medium size and neatly finished; Mr. C. Warden, gardener to Sir F. Bathurst, Clarendon Park, Salisbury, second; Mr. Wills third, both staging well. For twelve incurved, distinct, Mr. Neville was first with medium-sized, well-finished blooms, Mr. Molyneux a very close second, Mr. Trinder third. For six incurved Mr. F. Annalls, gardener to Chaloner Shenton, Esq., The Glen, Golden Common, Winchester, was a good first; Mr. A. Prouting, gardener to Miss Butler, Winchester, second. For twelve Japanese, distinct, Mr. Molyneux led the way, with even brightly coloured blooms; Mr. C. Brooks, gardener to H. A. Simmonds, Esq., Red Rice, Andover, and second. Third, Mr. Neville, who was also placed first for twelve reflexed in not less than eight varieties with even, fresh specimens. Mr. C. Brooks was again second. Mr. Neville was also first for twelve Anemones, with good, clean specimens, Messrs. Drover second. The best blooms of Pompons were staged by Mr. Neville, but as he did not comply with the conditions of the schedule—distinct varieties—he duplicating two varieties which the Judges failed to see, he should have been disqualified. Mr. T. Annalls was a good second, judging correctly the stipulated number. Fruit was of good quality.

WESTON-SUPER-MARE.—November 14th.

Fortunately for this Society fine weather prevailed throughout the day, and it is to be hoped a capital attendance of visitors would more than compensate for the loss resulting last year owing to the unfavourable weather. The Show was held in the Victoria Hall, but this was scarcely large enough owing to a great increase in the number of entries. It was very well arranged, and Messrs. W. H. Vanes and S. Lewis, the Honorary Secretaries, and a committee of gentlemen interested in horticulture and practical gardeners, are to be congratulated upon the result of their labours.

Among the numerous trained plants of Chrysanthemums shown there were many that were most praiseworthy, and a considerable number that were much disfigured by a free use of large unpainted deal stakes. The best six flatly trained specimens of large-flowering varieties were staged by Mr. W. Brooks, Weston-super-Mare, these consisting of Mrs. Dixon, Prince Alfred, Mr. Glenny, Prince of Wales, Mrs. G. Rundle, and Gloria Mundi, all well grown and fresh. Mr. C. Holland, gardener to W. Ash, Esq., Weston-super-Mare, was a close second, his plants losing in point of size only. Mr. W. Browne, gardener to the Rev. W. W. Aldridge, Weston-super-Mare, was first, and Mr. W. Daffurn, gardener to F. D. Cox, Esq., Weston-super-Mare, second for four plants of large-flowered varieties. The first prize for six Japanese varieties was awarded to Mr. C. Holland, who had beautifully flowered well trained specimens of Source d'Or, Elaine, Margot, Bouquet Fait, James Salter, and Madame Bertie Rendatler, the latter plant also being singled out as being the best specimen of a Japanese variety in the Show. In this class Mr. W. Brooks was second, and not much fault could be found with his exhibits. Mr. W. Browne was first for four Japanese varieties, and Mr. W. Daffurn second. Several creditably flowered pyramids were shown in the different classes provided for them, the most noteworthy among these being staged by Mr. C. Holland. The last named also had much the best standard trained plants of any varieties, the specimens of Mrs. Forsyth, Jardin des Plantes and Christine being noteworthy. A remarkably well-grown dwarf-trained specimen of Mrs. G. Rundle gained Mr. Holland a first prize and a special award as being the best specimen of incurved variety in the Show. Mr. W. Brooks was a creditable second. There was a good display of dwarf-trained Pompon varieties, the best six plants consisting of Astarte, Mdlle. Marthe, Cedo Nulli, Marie Stuart, Alala, and Bob, all beautifully flowered, being staged by Mr. C. Holland, the second prize going to Mr. Brooks, who also had several good plants. Groups of Chrysanthemums were not so good as usual, that which gained Mr. Brooks the first place evidently being arranged in a very hurried manner. The quality of the flowers was good, hence its being placed in front of that arranged by Mr. Lewis, gardener to J. E. Cole, Esq. Mr. W. Brooks was well first with a good group of miscellaneous plants, and Mr. C. Holland second. A grand bank of Tree Ferns, Adiantums, Asplenums, Palms, Crotons, and other plants was formed by the exhibits in the classes for six Ferns and six fine-foliaged plants, and this was quite a feature in the Exhibition. Mr. W. Daffurn was first for six richly coloured Primulas, and Mr. W. Brooks a good second.

Cut flowers were shown in greater numbers than usual, and made quite an imposing display. The best twenty-four large flowered varieties was staged by Mr. E. Miller, Old Sneyd Park, Bristol, the most noteworthy among these Alfred Salter, Princess Teck, Bronze Queen of England, Lord Wolseley, Queen of England, Cherub, Mr. Bunn, John Salter, Jeanne d'Arc, Mr. N. Davis, Prince Alfred, Lord Alcester, and Barbara. Mr. W. Brooks was second, his best being Princess of Wales, White Globe, Cherub, Venus, Alfred Salter, and Barbara. Mr. W. Lewis was third. Mr. C. Holland was first for twelve varieties, among these being good blooms of Jeanne d'Arc (the premier bloom of large flowered variety in the Show), Queen of England, Empress of India, Venus, and Isabella Bott. Mr. W. Daffurn was a good second, his best being Lord Wolseley, Alfred Salter, and Golden Empress of India. Mr. W. Coates, Westbury-on-Trym, was first for six varieties. The competition, as in the other classes, was fairly good with twenty-four Japanese varieties, and with these Mr. E. Miller was first. His best were Thunberg, E. Molyneux, Soleil Levant, Baronne de Prailly, L'Adorable, Fimbriatum, F. Marrouch, Mons. Brunet, J. Delaux, Criterion, and Mr. Orchard. Mr. W. Brooks was second. In the class for twelve Japanese varieties Mr. Daffurn was first, his best being Val d'Andorre, Madame C. Audiguier, Meg Merrilies, M. Brunet, Boule d'Or, Madame Laing, Baronne de Prailly, and Fair Maid of Guernsey. Mr. C. Holland was second. Mr. W. Coates was first for six varieties, and Mr. E. Wheeler, gardener to Mrs. Charrington, second. Only two stands of Anemone-flowered varieties were staged, and with these Mr. E. Miller was first, and Mr. W. Brooks second. Mr. W. C. Winstone, Clifton, was first for a hand bouquet, this being moderately large, and composed of Orchids in variety, Lilies of the Valley, Stephanotis, Pancratiums, and other choice flowers most tastefully arranged. Mr. W. Brooks, who was second, also had a very good bouquet. The last named was well first for an epergne, in which a choice assortment of flowers were prettily arranged. Mr. Winstone was a good second. Mr. Brooks was first, Mr. Holland second, and Mr. Winstone third with baskets of autumn foliage, grasses, and fruit.

The fruit classes were better filled than on any previous occasion, and the quality generally was good. In the class for any white Grape Mr. W. Coates was well first with two large and remarkably well finished bunches of Muscat of Alexandria, and Mr. Miller second with the same variety. Mr. W. Daffurn took the lead with black Grapes, having well finished Alicante ; Mr. W. Hughes being second with fairly good Mrs. Pince. The first prize for four dishes of Pears was awarded to Mr. W. Daffurn, who had sound well coloured fruit of Beurré Clairgeau, Marie Louise, Beurré Diel, and Doyenné du Comice. Mr. W. Lewis was second. Mr. Daffurn was also first for a single dish, staging good Doyenné du Comice ; the second prize going to Mr. E. Wheeler, who had a clean dish of Duchesse d'Angoulême. Each exhibitor in the class for four dishes of culinary Apples infringed the rules, and no award was made. With one dish, Mr. E. Brooks, Cheddar, was first for fine well coloured fruit of New Hawthornden, and Mr. W. Browne second with fine Warner's King. Mr. R. Carey was first for four dessert varieties, these consisting of Cox's Orange Pippin, Rosemary Pippin, Adam's Pearmain, and Worcester Pearmain, all well selected ; Mr. W. Lewis was second. The last named was first for a single dish, and Colonel Mordaunt second.

BIRKENHEAD AND WIRRAL SHOW.—Nov. 14th and 15th,

This Society held their second Exhibition in the Town Hall on the above dates, and though not a large one, it was neat, and the exhibits were considerably in advance of what were staged last year.

The schedule provided twelve classes for cut blooms, half of them being open to all, and the remaining half for local competitors. In the open classes for twenty-four incurved, not less than eighteen varieties, Mr. J. Gould, gardener to R. N. Dale, Esq., Bromborough Hall, was well to the front with large fresh flowers. The varieties were :—Back row—Queen of England, Golden Empress, Empress of India, Lord Wolseley, Empress of India, Lord Alcester, Queen of England, and Golden Empress. Middle row—Emily Dale, Alfred Salter, John Salter, Jeanne d'Arc, Lord Alcester, Mrs. Heale, Lord Wolseley, and Jeanne d'Arc. Front row—Princess of Wales (good), Refulgence, White Beverley, Pink Venus, Mr. Bunn, Princess Beatrice, White Venus, and Prince Alfred. Mr. G. Burden, gardener to G. Cockburn, Esq., Oxton, was second, the two collections only were staged. In the corresponding (local) class for eighteen distinct varieties, the last-named exhibitor was well to the front. Mr. J. Gould was a good second, and Mr. E. Broadey, gardener to H. Jones, Esq., Hooton, third. For twelve blooms (open) Mr. G. Lyon, gardener to J. H. Kenion, Esq., Rock Ferry, took the premier award amongst three competitors, with good blooms of the following :—Back row—Empress of India, Queen of England, Lord Alcester, and Jeanne d'Arc. Middle row—Alfred Salter, Mr. Bunn, Lord Wolseley, and Golden Empress. Front row—White Venus, Refulgens, Jardin des Plantes, and Prince Alfred. Mr. E. Broadey was placed second ; Mr. R. C. Townsend, gardener to Sir W. B. Forwood, Blundelsands, third. In the local class for twelve blooms Mr. C. Smith, gardener to D. Wilson. Esq., Devonshire Place, was well first.

In the open class for twenty-four Japanese, not less than eighteen varieties Mr. J. Gould was first with fresh large well colonred flowers of the following :—Back row—Boule d'Or, E. Molyneux, Belle Paule, Meg Merrilies, M. Tarin, R. Brocklebank, E. Molyneux, and Boule d'Or. Middle row — Marguerite Marrouch, Mdlle. Lacroix, Criterion, J. Delaux, Golden Dragon, Val d'Andorre, Elaine, and Belle Paule. Front row—R. Brocklebank, Madame J. Laing, Avalanche, Thunberg, Mdlle. Lacroix, Comte de Germiny, J. Délaux and Gloriosum. Mr. G. Burden was second, neat but small blooms. Mr. T. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall, third with even smaller flowers. In the corresponding local class for eighteen distinct varieties Mr. G. Burden was successful, and staged very fine flowers. Messrs. J. Gould and Broadey were the prizewinners in the order named. For twelve Mr. G. Burden again took the lead, having a remarkably fine flower of Mdlle. Paule Dutour. Mr. C. Waring, gardener to Mrs. J. Aikin, Princess Park, was a good second, and Mr. E. Broadey third, with flowers uneven in size.

Fruit, plants, and miscellaneous exhibits were numerous and of a very interesting character.

BEDFORD.—November 14th and 15th.

The second annual Exhibition of this Society was held on the 14th and 15th inst., in the Corn Exchange, Bedford. The Show was far in advance of last year. The groups of Chrysanthemums and other plants were arranged on the sides of the hall in a semicircle, with tables down the centre for cut blooms, fruits and vegetables, and ample room between for visitors. In the open class for a group of Chrysanthemums not exceeding 50 feet square, Mr. J. C. Sheppard, nurseryman, Bedford, was first with a neat arrangement ; C. Franklin, Esq., Bedford, second (gardener, Mr. G. Vine) ; third, F. Howard, Esq., (gardener, Mr. Robinson). Division B, open to amateurs and gardeners in the county of Bedford.—These groups were similar to the open classes but smaller, Mr. R. Waller, gardener to J. P. Howard, Esq., Clapham Park, was first ; second, Mr. R. Day, gardener to J. Hawkins, Esq., Mayor of Bedford. An edging of foliage plants is allowed round the groups, which is a step in the right direction, as it is always difficult to grow Chrysanthemums dwarf enough. The edgings employed were chiefly Maidenhair Ferns, Isolepis gracilis, and other light foliage plants. The great feature of the Show were the cut blooms in the open classes. Mr. R. Adams, gardener to G. B. Hudson, Esq., Frogmore Hall, Herts, was easily first with twenty-four incurved ; Mr. J. Kipling, gardener to Lord Lytton, Knebworth, Herts, was a good second. For twenty-four Japanese the same exhibitors were awarded the first and second prizes in the order named above.

Grapes were not numerous, but for two bunches of Alicante Mr. G. R. Allis, gardener to Major Shuttleworth, Old Warden Park, was first with grand bunches, well coloured, and carrying a good bloom ; Mr. R. Day, gardener to J. Hawkins, Esq., was second with rather loose bunches but well coloured berries. In the class for white Grapes Mr. G. R. Allis was first for two bunches of well ripened Golden Queen. Apples and Pears were a good show. Four dishes culinary Apples, first, Mr. Allis ; second, Mr. R. Day ; third, Mr. J. Herman. Four dishes dessert Apples, first, Mr. G. R. Allis ; second, Mr. R. Day ; third, Mr. J. Herman. Much more might be said of the several other exhibits if space would allow. Through the efforts of the energetic Hon. Secretary, Mr. J. Sanders Clarke, and a hard-working Committee the Show was well arranged.

BOURNEMOUTH.—November 14th and 15th.

Mild in winter and cool in summer, with a grand sea view and a rising background of Pine-clad slopes, with Arbutus trees laden with flowers in November, and some of them with Strawberry-like fruits, with handsome villas widely scattered, broad well-kept tree canopied roads, and sundry other charms, including picturesque gardens, some two miles long, there is no wonder this healthy seaside resort should be so much patronised by visitors from this and other countries. It is in every way a delightful town—a town without streets it may be called—a town of grand hotels and pleasant villas containing apartments for visitors. These are constantly increasing in number, and will increase now that the London and South-Western Railway Company have opened a new and direct route, and provide trains which run from the metropolis in a little over 2½ hours. It would be strange if such a fashionable town as this should not have an Exhibition of the fashionable flower—the Chrysanthemum—hence a Society is established, of which H.R.H. the Princess Christian is the chief patroness. The Show was held in the new and capacious covered tennis court of the Mont Dore Hotel, a palatial building, most pleaaantly situated a little distance from the sea.

As only half an hour was at disposal for "taking notes," it can only be said that the groups and cut blooms were the most worthy of inspection, as trained specimen plants were scarcely represented. There were, however, several of what may be termed conservatory plants that occupied the centre of the building, and in the mass were effective. Very good fruit and vegetables were also exhibited, and several bouquets.

In the open class of twenty-four incurved blooms in not less than eighteen varieties, the first prize was won by Mr. W. Osborne, gardener to Rev. H. Hopkins, with Empress of India (3, and premier bloom), Princess of Wales (3), Golden Empress (2), Alfred Salter (2), Jardin des Plantes (2), Jeanne d'Arc, Empress Eugenie, Hero of Stoke Newington, Lord Alcester, Baron Beust, Queen of England, Lord Wolseley, White Globe, White Venus, Nil Desperandum, sport from Guernsey Nugget, and Countess of Dudley, a regular stand of fresh medium-sized blooms. Mr. T. K. Ingram was placed second with neat good blooms, equal to the others in culture, but several of them a week too old. Mr. W. Gallop, gardener to H. N. Middleton, Esq., was a good third, but the date was too late, as several of them had lost their freshness. In the class for twelve incurved (local), Mr. W. Ward, gardener to Mrs. Colville, secured the foremost place with Queen of England, Beauty, Princess of Wales, Alfred Salter, Prince Alfred, Mrs. N. Davis, Jardin des Plantes, Jeanne d'Arc, Lord Wolseley, and Princess Teck, even and good ; not distantly followed, however, by Mr. T. Gould, gardener to Mrs. Dawson Danver, and Mr. T. K. Ingram.

Japanese blooms were well represented ; they were fresher on the whole than the incurved, and the prizes were well contested. Mr. W. Gallop secured the chief position in the open class of twenty-four blooms with Maiden's Blush (2), Comte de Germiny (2), Jeanne Delaux (2), Belle Paule (2), M. Ardène (2), Lady Lawrence (2), Thunberg, Comtesse de Beauregard, Mdlle. Lacroix, Madame C. Audiguier, Soleil Levant, Fair Maid of Guernsey, Baronne de Prailly Grandiflorum, Madame Boucharlat, Val d'Andorre, and Madame Bertie Rendatler—a good stand, in which Jeanne Délaux was the premier of the Show. Messrs. T. K. Ingram and W. Osborne were the other prizewinners in the class, both presenting creditable stands. Messrs. G. Garner (gardener to Mrs. Braddyll), T. K. Ingram, and T. Gould were the respective prizewinners with twelve blooms, all the stands good. The first contained excellent examples of Madame C. Audiguier, Golden Dragon, Belle Paule, Thunberg, La Triomphante, Mdlle. Lacroix, Val d'Andorre, Elaine, Comte de Germiny, Maiden's Blush, Peter the Great, and Criterion. Mr. F. J. Ellis was first with six reflexed, staging in very good condition Cloth of Gold, Amy Furze, Cullingfordi, Pink Christine, Mdlle. Tezier and Phidias ; Messrs. Ingram and Ward following. Mr. Ellis was also successful with six Anemones, the varieties being Mrs. Pethers, Lady Margaret, Cincinnati, Souvenir de Lardenne, and Gluck.

Passing some of the other local classes, it may be said briefly that by far the best large group of plants, both in quality and effect, was arranged by Messrs. G. Watts & Sons; Mr. F. J. Ellis second, with tall plants but good blooms, and Mr. Ingram third with a too stiff and formal arrangement, a fourth prize being granted to Mr. Earp. In the smaller (amateur) class, the prizes were awarded to Messrs. Sola, Sted-

dall, and Symons. In the single-handed gardeners' class, Mr. J. Biles, gardener to F. Atken, Esq., distanced all competitors with a very creditable arrangement. The best gardeners' bouquet was very good, and was exhibited by Mr. Garner, and much the best ladies' bouquet by Miss Watson. Mr. Richards, Someley Gardens, staged the best Grapes, and Mr. Williams, Canford, the best Apples and Pears. The Exhibition was enriched by special groups of plants contributed by the following local nurserymen and florists—Mr. J. Swaffield, Mr. Ingram, Mr. Haskins, Mr. Watts, and Messrs. W. Stewart & Sons; also by Messrs. Cooling and Sons of Bath.

It may be added, as a pleasant surprise, that in seeking a night's accommodation we were fortunate in finding the proprietor of the handsome villa, 10, Westover Road, Mr. J. G. Harding, a near relative of Mr. A. Harding of Orton Hall Gardens, Peterborough, and as our host had been for forty years butler to the late Bishop of Llandaff, he knows how to make his guests comfortable. This visit to Bournemouth was too short, yet enjoyable, for the town and its surroundings are unique, and it is no wonder that those who have once seen it have a wish to go again. It is hoped the Chrysanthemum Show proved a financial success.

WORCESTER.—November 15th.

After a lapse of five years this Society held an autumn Show, which was well patronised by the public. There was good competition in the Chrysanthemum classes, also for groups of plants arranged for effect to occupy 100 square feet. Mr. Gwynne, gardener to T. R. Hill, Esq., taking the lead in the latter class with a neat group of brightly coloured Dracænas, Crotons, &c. Mr. J. H. White was second. His group was neatly arranged, although it contained no plants of special merit. Mr. J. W. Sedgley, gardener to Mrs. Holland, was third. In the class for twelve Chrysanthemums, distinct varieties, in pots not to exceed 12 inches in diameter, Mr. Sedgley, gardener to Mrs. Holland, was an easy first; his plants were neatly trained about 4 feet over, and covered with fresh blooms and healthy foliage. Mr. Maylett was second. In the corresponding class for six plants Mr. Sedgley was again first. Mr. Gwynne was second with good blooms but smaller plants. There were classes for single specimens, Mr. Sedgley being first for Japanese with a fine plant of Elaine, Mr. Gwynne second with Hiver Fleuri, and Mr. Maylett third. For a single specimen incurved Mr. Gwynne was first, Mr. Sedgley second, and Mr. Maylett third. For a single Pompon Mr. Sedgley was first and Mr. Maylett second.

There was an excellent display of cut blooms for twenty-four distinct varieties. Mr. Froud, gardener to the Rev. Coventry, was first with good blooms, the best of which were Jeanne d'Arc, Lord Alcester, Queen of England, Lord Wolseley, Prince Alfred, Edwin Molyneux, Madame C. Audiguier, and Jeanne Délaux. Mr. Gwynne was a close second, and Mr. Maylett third. For twelve incurved the tables were turned, Mr. Gwynne being first with fine blooms, Mr. Froud being second, Mr. Maylett third. For twelve Japanese Mr Gwynne was again first, Mr. Maylett second, and Mr. Froud third. Mr. Sedgley was first for six Primulas single, Mr. Jones second, Mr. Maylett third. With six double Primulas Mr. Maylett was first. Mr. Childs, gardener to Earl Coventry, was first for a collection of six dishes of fruit, which contained excellent Gros Colman Grapes, and Muscat of Alexandria, good Melon, Pears, Apples, and Medlars. Mr. R. Robbins, Rhydd Court, was first for six dishes of Pears, and Mr. Childs second.

WIMBLEDON.—November 15th.

A bright and pleasing Show was held in the Drill Hall, Wimbledon, on Thursday last, cut blooms, groups, fruit, and miscellaneous exhibits being numerous and satisfactory in quality. Mr. C. Gibson, Morden Park Gardens, scored a series of successes, taking premier honours in several classes with fresh substantial blooms of incurved, Japanese, reflexed, Pompons, and Japanese Anemones. With groups of Chrysanthemums, Mr. Townsend of Putney won the chief prize for a well-arranged and varied collection, Messrs. Hunt and Carter following in the order named, but the second prize group, though containing the finest blooms, was disfigured by the stems being tied across each other in front to form a kind of lattice hiding the other stems. The groups of miscellaneous plants were excellent, particularly that from Mr. Luff, which gained him the first place. The Hon. Secretary, Dr. Walker, was as busy as usual, while Mr. J. Lyne conducted the arrangements in his customary energetic but agreeable manner.

TAUNTON.—November 15th.

In some respects this was the best autumn Show yet held at Taunton, the improvement being most apparent in the fruit classes. The Committee are all practical gardeners, with these being associated Mr. R. H. Poynter as Honorary Treasurer, and Mr. W. Hoskin, Honorary Secretary, and on the whole they carry out their work in a very creditable manner. The attendance of visitors was most satisfactory, and at times amounted to a great crush.

There were a considerable number of classes for trained Chrysanthemum plants, but in few instances only was the competition good, the general complaint being the backwardness of the plants. Mr. C. Lucas, gardener to John Marshall, Esq., Taunton, was first for six specimens of Japanese varieties, all well flowered plants. With six incurved varieties Mr. W. Cavill, gardener to H. F. Manley, Esq., Taunton, was first, but many of the blooms were only half expanded. In the class for four Japanese varieties Mr. C. Burt, gardener to Mrs. C. Meade, was first; and for four reflexed varieties, Mr. C. Way, gardener to J. E. Coulthurst, Esq., took the lead, the exhibits being creditable in each instance. A special class was provided for six specimens, any varieties. Mr. W. Cavill was well first, having finely flowered plants of Lady Selborne, Fair Maid of Guernsey, Peter the Great, Bouquet Fait, Elaine, and Madame Bertie Rendatler. Mr. C. Lucas was second with smaller but well-flowered plants. Several classes were provided for single specimens, and in these Messrs. C. Lucas, C. Way, W. Cavill, and J. Henley were winners of first prizes. Several groups of Chrysanthemums were in competition, but these were more remarkable for the quantity rather than the quality of the blooms on the plants. Mr. T. Wilkins, gardener to Miss Cleeve, was well first; Mr. J. Desmond, gardener to Colonel England, second; and Mr. C. Burt third.

A variety of other plants were in competition. Mr. C. Lucas was easily first for a mixed group, admirably arranged. Mr. R. H. Poynter was a creditable second, and Mr. J. Durk, gardener to H. J. Penny, Esq., third. The best six Ferns were staged by Mr. J. Parrish, gardener to Mrs. Gorden; and Mr. J. Reed, gardener to E. J. C. Parsons, Esq., was second. For a single specimen Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was first, and Mr. J. Parrish second. The first prize for six Poinsettias was awarded to Mr. J. Mockeridge, gardener to J. E. W. Wakefield, Esq., and the second to Mr. J. Parrish. W. H. Fowler, Esq., was first for Cyclamens, and the prizewinners for Lycopods was Mr. W. J. Durk, who was first; and Mr. E. Bradbeer, gardener to W. B. Hellard, Esq., second. Primulas are always a feature at this Show, the exhibits being numerous and good in quality. In one class Mr. W. Cavill was first, and Mr. W. H. Worrall second; and in another instance Mr. C. Cooper, gardener to G. L. Collard, Esq., was well first, and Mr. W. Cavill second.

There was a falling off in the entries for cut blooms, but in nearly every class the winners of the first and second prizes were nearly evenly matched. In the class for thirty-six varieties, eighteen to be incurved and eighteen Japanese, Mr. C. Lucas was first, beating Mr. J. B. Payne, gardener to the Lord Bishop of Bath and Wells, by two points only. Mr. Lucas had remarkably good blooms. Mr. Payne's had exceptionally fine blooms of incurved, and generally good Japanese. With twenty-four blooms, to consist of incurved and Japanese varieties in equal numbers, the competition was equally close; Mr. W. Thomas, gardener to Wilfred Marshall, Esq., who was placed first, and Mr. C. Cooper, the winner of the second prize, both staging grand blooms. Mr. W. Thomas was also first for twelve Japanese varieties, and Mr. C. Cooper second, while for six Japanese varieties Mr. C. Lucas was first, and W. H. Fowler, Esq., second. The first-named had a pretty bloom of Florence Percy and Ralph Brocklebank in good condition. The best twelve reflexed varieties were also staged by Mr. W. Thomas, who had fine blooms of Golden Christine, Cloth of Gold, Dr. Sharpe, White Christine, Cullingfordi, and W. Holborn. Mr. S. Tottle was a good second. Mr. C. Lucas was first for six Anemone flowered varieties, winning with capital blooms of Timbale d'Argent, Thorpe junior, Lady Margaret, Aequisition, Gluck, and Madame Clos. Mr. W. Thomas was a good second. Mr. C. Cooper had exceptionally good Zonal Pelargonium blooms, and was easily first; as was Mrs. A. C. Dyer with a hand bouquet. Vases of cut flowers and baskets of wild foliage and fruit were very poor.

As before stated, fruit was shown in much greater quantities than usual, and the quality was also highly satisfactory.

BRIXTON, November 15th and 16th.

Chrysanthemum growers in the suburban district of Brixton, Streatham, and Clapham have had many bright and beautiful exhibitions, but never a better one than on the dates named. Plants and blooms were alike excellent, while fruit and vegetables were of superior quality. Only a compressed report can be given indicating the varieties in the chief classes. Two good stands of twenty-four incurved blooms were staged by Mr. Howe, gardener to H. Tate, Esq., Streatham Common, and Mr. T. Sadler, gardener to Mrs. Lambert, Streatham, the former securing the leading position with the following varieties:—Back row—Golden Empress, John Salter, Empress of India, Alfred Salter, Emily Dale, Bronze Queen, Beauty, and Queen of England. Middle row—Princess of Wales, Mr. Bunn, Jeanne d'Arc, Nil Desperandum, Mrs. Weston, Mrs. Haliburton, Lord Wolseley, and Jardin des Plantes. Front row—Mr. Brunlees, Eve, Cherub, Barbara, White Globe, Emily Dale, John Salter, and Pink Venus. In the class for twelve incurved there was great competition, Mr. J. W. Wildman leading with admirable examples of Empress of India, Bronze Queen, Lord Alcester, Queen of England, Alfred Salter, Golden Empress, John Salter, Emily Dale, Mrs. Shipman, Hero of Stoke Newington, Mrs. N. Davis, and Empress Eugénie. The remaining prizes fell to Mr. Howe and Mr. E. Cherry, gardener to Mrs. Gabriel, Streatham, with creditable stands.

There was a splendid display of Japanese blooms; indeed, it is doubtful if finer have been seen than those staged by Mr. T. Mursell, gardener to Mrs. Burton, Streatham, in the first-prize stand of twenty-four distinct varieties—namely, Back row—Gloriosum, Fair Maid of Guernsey, E. Molyneux, Snowstorm, Sunflower, Madame C. Audiguier, Madame Blanche Pigny, and Mrs. C. W. Wheeler. Second row—Stanstead White, Hamlet, Meg Merrilies, Ralph Brocklebank, Val d'Andorre, Album Fimbriatum, Boule d'Or, and La Triomphante. Front row—Maggie Mitchell, Golden Dragon, W. G. Drover, Avalanche, M. Freeman, H. Cannell, Madame John Laing, and Marguerite Marrouch. Sunflower was remarkably fine, and certificated. The remaining prizewinners in the class were Messrs. W. Howe and J. Plumb, gardener to Mrs. Grote, Chapham Common, with highly satisfactory examples. Mr. Mursell was also first in the class for twelve blooms, in which there was great competition with superior examples of Gloriosum, E. Molyneux,

Madame B. Pigny, Mrs. Wheeler, La Triomphante, Fair Maid of Guernsey, Ralph Brocklebank, Meg Merrilies, Sunflower, Hamlet, Madame John Laing, and Marguerite Marrouch; Messrs. W. Howe and T. Sadler following with good stands. Special prizes were offered for twelve blooms staged with stems a foot long, and very effective the stands were, the prizes being won by Messrs. Mursell, Howe and Tate respectively. Anemone varieties were of good average quality, the prizes falling to Messrs. F. Fullbrook, Streatham Hill; F. Saunders, Clapham Common; and D. Gibbons in the order named; the varieties in the leading stand being—Lady Marguerite (2), Margouline (2), Georges Sand (2), Minnie Chate, Gluck (2), Acquisition, Fleur de Marie. Mr. W. Howe secured the chief with reflexed blooms in good competition, followed by Messrs. Gibbons and Sadler. Mr. C. Livermore had the best Pompons.

Specimen plants were well trained, healthy, and bearing good blooms, the prizes for six plants being won by Messrs. J. Weston, E. Cherry, and W. Clarke, in the order named. In the class for Pompons the successful exhibitors were Messrs. Cherry, Weston, and Young, all staging well. Mr. Weston had the best pyramids, and Mr. W. Clarke the best standards. Specimen Japanese plants were admirable in culture and floriferousness, Messrs. Cherry, Weston, and W. Clarke well winning the prizes as named. Ferns were most creditably exhibited, Mr. H. Wright's first prize collection of four plants containing a remarkable example of Gymnogramma schizophylla. Single Primulas from Mr. Mursell, and doubles from Mr. Guyett, were unusually fine. Stove and greenhouse plants were well represented, and Orchids from Messrs. Rawson, Guyett, and Howe contributed to the richness of the Exhibition, and Mr. J. W. Silver had a very handsome wreath.

In the fruit classes, black Grapes from Messrs. Hill, Howe, and Wing were excellent, the contest between the two former being exceedingly close; but in the white class their positions were reversed. Mr. Howe staged the best Pears and culinary Apples, and Messrs. Guyett and W. Collins the best dessert Apples.

Vegetables were of first class quality, the prizes for twelve varieties being won by Messrs. Howe, Saunders, and Cherry; and for eight sorts by Messrs. Sadler, Wright, and Parrot. The Show was faultlessly arranged under the experienced superintendence of Mr. W. Hall, the Secretary, aided by willing assistants.

SALISBURY.—November 15th and 16th.

The Wilts Horticultural Society held its third annual Exhibition of Chrysanthemums and fruit in the Market House on the above dates, but unfortunately was not favoured with fine weather. Groups of plants arranged for effect have become quite a feature at the Wilts Horticultural Society's Shows. Mr. Brown, Portland Place, Salisbury, is a very keen and successful amateur, and on the present occasion he secured the £10 10s. cup in the open class for a group of Chrysanthemums arranged in a semicircle of 10 feet in diameter. Mr. Chalk, gardener to Mr. Reid, Wilton Road, Salisbury, was a good second; his plants and blooms were good, but the arrangement was too formal. Mr. Lovibond, St. Anne Street, Salisbury, was third. In the corresponding class (open only to those who do not keep a regular gardener) Mr. Councillor Haskins, Poultry Cross, Salisbury, was awarded the £5 5s. cup for well flowered plants capitally arranged in a semicircle of 8 feet in diameter. Five good groups of miscellaneous plants were arranged in a semicircle of 10 feet by 6 feet, Mr. Brown again taking first position with an arrangement both graceful and well balanced in colour.

Cut Blooms.—The coveted prize of a silver cup, value £10 10s., and a small money prize which was given with each cup as a first prize for twenty-four blooms, was secured by Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, with a fine solid back row of Japanese, the incurved being of medium size but fresh and well finished. The varieties were:—Back row—Boule d'Or (2), very large; Duchess of Albany, Thunberg (2), Mdlle. Lacroix (2), Japonais, Ralph Brocklebank. Middle row—Queen of England (2), Lord Alcester (2), Princess of Wales, Empress of India (2), Alfred Salter. Front row—Barbara (2), Jardin des Plantes (2), Jeanne d'Arc, Princess of Teck, White Venus, and Cherub, the colours being well blended. Mr. Inglefield, gardener to Sir John W. Kelk, Bart., Tedworth House, Marlborough, being a good second. Mr. Flight, Cornstiles, Twyford, was third, showing all incurved varieties, which were rather flat throughout. There were four good lots put up in this class.

In the class for eighteen blooms (open to amateurs only), Mr. Annalls, gardener to Chaloner Shenton, Esq., The Glen, Golden Common, Winchester, winning the £5 5s. cup with fairly good blooms of the following:—Back row—Gloriosum (2), one very fine and deep Baronne de Prailly, Fair Maid of Guernsey, E. Molyneux, Madame J. M. Pigny. Middle row—Cullingfordi, Golden Empress of India (3), Lord Alcester. Front row—Madame C. Audiguier, Prince Alfred, Lord Eversley, Lord Wolseley, and Golden Queen of England, Mr. Councillor Haskins being second; his best blooms being Duchess of Albany and Madame C. Audiguier. Mr. W. Batten, Old Basing, Basingstoke, was third. In the class for twelve blooms Mr. Fred Griffin, Wilton Road, Salisbury, was first with a good stand. Mr. C. Melhuish, Exeter, was second, and Mr. W. Batten was third.

Fruit was not shown extensively, but the quality was, with few exceptions, excellent. Mr. Ward was first with a collection of six kinds of fruit. Mr. Warden was a capital second. With two bunches of Alicante Grapes Mr. Warden was easily first, with large, shapely, and well coloured bunches, carrying a very heavy bloom, Mr. Chalk being second with large but badly finished bunches. Mr. Warden and Mr. Chalk were again first and second with Muscat of Alexandria, the former showing good bunches, the berries being of good size, clean, and of a beautiful golden colour. Mr. Warden was first with grand examples of Gros Colman in the class for any other black Grape than Alicante, and in the corresponding class for any other white than Muscat Mr. Ward was first with Trebbiano, similar to those shown in his collection.

CHISWICK.—November 16th.

Somewhat unfavourable weather militated against a large attendance at the Chiswick Vestry Hall on the occasion of the annual autumn Show, but those who disregarded the unpleasant state of the elements were rewarded by an inspection of a most interesting exhibition. Chrysanthemums were of course the most prominent feature, and to the most important classes devoted to them our remarks must be confined.

Groups (not to cover a space of more than 60 square feet) were arranged by four growers, the local nurserymen, Messrs. Fromow and Sons, securing the first prize. The plants were healthy but small, and the blooms, collectively considered, hardly of average quality. General effect is, however, the object chiefly aimed at in such classes as this, and Messrs. Fromow's plants were admirably arranged. Mr. Mears, gardener to J. T. Thornycroft, Esq., Chiswick, was second, and Mr. Davis, gardener to H. G. Lake, Esq., Chiswick, third. Mr. May, gardener to the Marquis of Bute, showed a fine group, not for competition, which was highly commended. Only one exhibited specimens of large flowering varieties—namely, Mr. Wright, gardener to E. H. Watts, Esq., Chiswick, to whom first prize was awarded. For one trained specimen, any class, Mr. Wright was again awarded first prize, Mr. Picking, gardener to J. Pulman, Esq., Chiswick, following. Messrs. W. Wood & Sons' special prize for twelve untrained plants fed with their liquid manure powder was won by Messrs. Fromow & Sons.

The principal class for cut blooms was that for twelve Japanese and twelve incurved varieties, distinct, and seven stands were in competition. Mr. Coombs, gardener to W. Furze, Esq., Teddington, followed up his previous successes this season by a somewhat easy victory. The Japanese were somewhat weak, but the beautiful condition of the incurved blooms more than compensated for this. The varieties were as follows:—Japanese: Boule d'Or, Edwin Molyneux, Madame Audiguier, Duchess of Albany, Mrs. J. Wright, Comtesse de Beauregard, Gloriosum, Madame J. Laing, Madame Baco, Mr. Garnar, Madame J. Pigny, and L'Ebouriffée. Incurved: Queen of England, Golden Empress, Empress of India, Lord Alcester, Bronze Queen, Mrs. Heale, Lord Wolseley, Princess of Wales, Princess Teck, Prince Alfred, Jardin des Plantes, and Hero of Stoke Newington. Mr. Waite, gardener to Col. Hon. W. P. Talbot, Esher, was second, his Japanese being much neater and fresher than those in the first prize stand, but the incurved were some few points behind. Mr. Munro, gardener to E. J. D. Paul, Esq., Twickenham, was third. The latter won with twelve Japanese, showing Boule d'Or, Val d'Andorre, Baronne de Prailly, Gloriosum, Fernand Féral, Mrs. J. Wright, Comte de Germiny, M. Elliott, Mdlle. Lacroix, Japonais, Marguerite Marrouch, and Album Plenum. Mr. Waite showed fresh blooms for second prize, and Mr. R. Wood, gardener to Mrs. Saunderson, Chiswick, was third. For six varieties the prizes went to Messrs. Palmer, gardener to W. F. Hume-Dick, Esq., Thames Ditton; Picking, and Collyer, gardener to Messrs. Murrell, Ealing, W.

E. Sanderson, Esq., St. Mary's Road, Harlesden, N.W., won with twelve incurved. His blooms were very small, but perfect in freshness and finish, forming a charming stand. The varieties were Princess of Wales, Hero of Stoke Newington, Lord Alcester, Queen of England, John Salter, Empress of India, Mr. Brunlees, Mrs. Norman Davis, Jeanne d'Arc, Alfred Salter, Golden Empress, and Princess of Teck. Mr. Coombs was second with much larger but less neat blooms, Mr. Waite being third. The latter won with six reflexed—Mdlle. Tezier, Amy Furze, Cullingfordi, King of Crimsons, Golden Christine, and Pearl Christine representing him. Messrs. Coombs and Jones, gardener to E. Hyde, Esq., followed. Pompons were best shown by Messrs. Coombs, Collyer, and Chadwick, gardener to E. M. Nelson, Esq., Ealing. The latter was the only exhibitor of single varieties, and was placed first. Mr. Sanderson won with six incurved, any variety, showing Hero of Stoke Newington finely; Mr. Waite being second with Queen of England; and Messrs. Fromow & Sons third with Lord Alcester. In a corresponding class for Japanese the latter firm won with fresh examples of Mdlle. Lacroix. Mr. Waite was third with F. A. Davis, the second prize lot not being discoverable. The chief feature of the amateurs' classes were the cut blooms shown by Mr. Sanderson.

Table plants, fruit, and vegetables were admirably shown in many instances, but space does not permit of further particulars.

HUDDERSFIELD.—November 16th and 17th.

The fifth Exhibition of this Society was held in the Town Hall on the dates named, but the Exhibition was not equal to that of last year. The schedule provided six open classes for cut blooms and twelve open to exhibitors within a radius of seven miles, three of these being specially reserved for local amateurs. In the class for forty-eight blooms, twenty-four Japanese and the same number of incurved, not less than eighteen varieties of each, there were three competitors. Mr. D. Lindsay, gardener to Sir Thos. Edwards Moss, Bart., Otterspool, Liverpool, won by three points with heavy flowers, some of which were slightly past their best. Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, was a very good second with smaller but fresher flowers. Mr. Cox took the lead with his incurved blooms by four points, but was seven points be ind

with Japanese. Mr. Midgley, gardener to H. Mason, Esq., Bingley, was third with much smaller flowers. The first collection contained:—Incurved—Back row—Empress of India, Prince Alfred, Queen of England, Lord Alcester, Prince Alfred, Queen of England, Lord Wolseley, Empress of India. Middle row—John Salter, Golden Empress, Lord Wolseley, Alfred Salter, Jeanne d'Arc, Emily Dale, Princess of Wales, and John Salter. Front row—Princess Beatrice, Mrs. Heale, Pink Venus, White Venus, Refulgens, White Beverley, Mr. Bunn, and Princess Beatrice. Japanese—Back row—Boule d'Or, Meg Merrilies, E. Molyneux, Ralph Brocklebank, Belle Paule, Golden Dragon, Jeanne Délaux, Stanstead White, a large very fine bloom. Middle row—M. J. Laing, Golden Dragon, Criterion, Meg Merrilies, E. Molyneux, Madame C. Audiguier, R. Brocklebank, and Madame J. Laing. Front row—Avalanebe, good; M. Marrouch, Elaine, La Triomphante, Thunberg, Val d'Andorre, Elaine, and Boule d'Or. Three collections were again staged in the class for twenty-four distinct varieties, half Japanese and the remainder incurved. Mr. Cox took the lead with bright fresh flowers, Mr. Lindsay was second, and Mr. Midgley third. In the corresponding local class Mr. J. Henderson, gardener to T. J. Hurst, Esq., Meetham, was placed first with very creditable flowers. Mr. F. Stokes, gardener to Mrs. C. Crosland, Crosland Moors, was second, and Mr. F. Senior, gardener to T. P. Crosland, Esq., Birkley Grange, third; four collections were staged. For twelve Japanese (local) Mr. W. Daniels, gardener to T. Hague Cook, Esq., Mirfield, was well first with large flowers; Mr. J. Henderson followed closely with smaller, slightly fresher examples; third, Mr. J. Turner, gardener to A. Fisher, Esq., Springdale. In the corresponding class for twelve incurved Mr. F. Hatch, gardener to J. F. Bugg, Esq., took the lead. In the open class for twelve large-flowering Anemones, not less than eight varieties, Mr. A. R. Cox was successful, and staged grand flowers; Mr. J. Henderson was second with smaller but neat flowers; Mr. Midgley secured the remaining award.

Bouquets were well represented, as also were stove and greenhouse flowers, miscellaneous plants and fruit.

DERBY.—November 17th.

The fourth annual Show of the Derby Chrysantbemum Association was held in the Royal Drill Hall on the date named. Cut blooms were of fair average quality. Several stands of cut blooms were exhibited with stems and foliage, no less than twenty stands of twelve blooms each being staged in this manner. The N.C.S. bronze medal and a money prize for groups brought five competitors, Mr. J. H. Biggs, Derby, being placed first, the plants possessing fairly good blooms. Mr. F. Bancroft, Derby, was second.

For twelve incurved blooms, distinct, the N.C.S. silver medal was offered with a money prize of 40s. Mr. A. H. Fowkes, Northampton, was first with medium sized, even, neatly finished blooms of Golden Empress, Empress of India, Lord Alcester, Queen of England, Alfred Salter, Jeanne d'Arc, Golden Queen of England, Princess of Wales, Mabel Ward, Prince Alfred, Jardin des Plantes, and Lord Wolseley. Mr. Thomas, gardener to W. J. Marshall, Esq., Taunton, was a close second; and Mr. J. Lambert, gardener to Col. Wingfield, Shrewsbury, third.

For twelve Japanese the N.C.S. silver medal and a money prize produced good entries. Mr. Thomas was here successful in winning first honours with medium-sized fresh blooms. Boule d'Or, Meg Merrilies, Madame C. Audiguier, Fair Maid of Guernsey, Edwin Molyneux, Baronne de Prailly, Ralph Brocklebank, W. G. Drover, Madame J. Laing, Japonaise, Belle Paule, and Duchess of Albany. Mr. J. Lambert second, and third Mr. Fowkes. The following classes were for members only. For twelve incurved, not less than eight varieties, Mr. F. Bancroft, Derby, was first with neat blooms staged with stems 8 to 10 inches with foliage attached. Second, Mr. C. Carrington. For twelve Japanese Mr. W. Boyes, Milford, was well to the front, Mr. F. Bancroft second, he also staging some good flowers. Mr. F. Bancroft staged also the best six reflexed blooms. For the best bouquet of Chrysanthemums Mr. J. H. Goodacre, Derby, was easily first with a neat arrangement in which the small white Pompon Snowdrop was effectively used. Mr. E. Letebford, Derby, was second.

Messrs. R. Smith & Co., Worcester, staged fifty dishes of Apples and Pears in good order, being rich in colour; these and thirty dishes of seedling Potatoes from the Speciality and Novelty Co., Newton-le-Willows, Lancashire, were "not for competition."

WORK FOR THE WEEK.

KITCHEN GARDEN.

The Vegetable Supply.—The supply of winter vegetables is turning out remarkably well. In July and August, when most of our winter crops were much behind their usual form, we felt doubtful as to the winter supply being sufficient, but September and October assisted them wonderfully, and now we have better winter vegetables than we had at this time last year. In some seasons our Savoys have been too early. They have hearted and begun to burst by this time, but this year we sowed the seed three weeks later, and they are now right. We have discontinued growing Drumhead Savoys, as they are too large and coarse. Green Globe is also inclined to coarseness, but those of the Tom Thumb type are of good quality, and it is these and the Reading Express that we have this season. Brussels Sprouts, than which there is no more useful vegetable, have been sprouting freely of late, and although they are not so large as we have had them, they are firm and choice. Broccoli for midwinter are well advanced, winter Spinach is luxuriant and plentiful, and Salsafy and Parsnips are full grown. Parsley is most abundant, and we feel capable of meeting all demands, but though others may be as favourably situated, and we hope they are, everything should be used with care, as at present there are indications of a severe winter, and should this happen all may be wanted before Easter. The man that serves the kitchen for us has strict orders to use the most forward first, and this is a rule to which there should be no exception.

Young Vegetables in Frames.—The absence of sunshine and the long nights are now making Cauliflower, Radishes, Lettuce, Endive, and such vegetables in frames appear pale and lifeless, and they will not grow much more after this time; but they are apt to suffer more from damp than cold air, and as much as possible of the former should be excluded from them. If the soil is saturated, get some dry sand and sprinkle a little of this over the surface between the plants. Make the lights watertight and keep them closed during damp weather, but withdraw them when the sun shines, and when the air is dry tilt them up on the sheltered side. When once the plants become accustomed to the winter weather they will cease suffering much from it, and it is to inure them to this that a little extra attention should be devoted to them now. When once frost reaches plants so as to make any of the leaves soft, it will be a most difficult matter to keep them in good health afterwards.

Forcing Rhubarb.—Rhubarb is the first of the kitchen garden roots that will force readily, and when ready by Christmas or earlier it is much valued on the table or in the market. Those who have to make the most of their gardens, not only in supplying their employer's table but in sending to market, would find plenty of Rhubarb if ready in December a very remunerative crop, and this is more than can be said of it when it becomes plentiful in spring. In the majority of gardens there are always surplus Rhubarb roots. Indeed we have often been sorry to see so much ground given up to this crop, as a few roots will produce as much Rhubarb as is wanted in any house, and now is the time to make good use of the surplus. They may be forced in various ways with little expense. A heated Mushroom house will bring them on rapidly. They may also be forced in Cucumber pits, beds near flues or in frames on the top of hotbeds. In all cases the roots should be lifted entire, put close to the heat, and covered with soil. A bottom heat of 80° will cause them to grow freely. The top growths should be kept in darkness to blanch them, and water should be applied to prevent the soil becoming too dry, but it should not be kept in a saturated state. When forced in frames, the lights should be kept covered, or wood shutters may be used. Rhubarb may also be forced in the ground by turning a cask or box upside down over the crowns, and covering the whole with a hotbed, but this is a system that can be much more successfully practised in spring than in autumn or at midwinter, and we do not recommend its being followed at present.

Globe Artichokes.—Of late we have been cutting many good globes which formed after the first crop was cut, and we have still small ones to use, but the plants are showing signs of disliking the cold weather, and as they should not be injured by frost, a good layer of long manure and leaves should be put round the stems of each plant at once. They will continue to die down after that, but the frost will not do them any harm, and all that are covered up will be sure to come up again in good time next spring.

Cabbages for Spring.—Many like to see their Cabbages for the spring begin to head about this time, as they think when this is the case they cannot fail to be very early, but we are of a different opinion, and we have generally noticed that the plants which head a little in the autumn or early winter are the worst and latest in spring. This can be explained. The part which forms the head of a Cabbage is always more tender than the green or outer leaves, and those which begin to head now soon become so tender in the centre that a few degrees of frost or a fall of snow that lies for a time affects this part far more than the hardy green leaves, and after a thaw the young heads generally appear as if they had been scorched or scalded. It is this which throws them back and makes them really less early than later autumn plants in spring, and no attempt should be made to force Cabbage at this time by applying any artificial manure. They will be benefited, however, by treading the soil very firmly round the necks of each plant, and drawing the soil well up to them with a drag hoe. Blanks in the rows may still be made up, and any very early plants that are seeding should be thrown away, as under no circumstances will they ever become valuable.

Trenching and Digging.—Our motto is to keep every quarter full as long as possible, but empty spaces will occur now, and as soon as they do trenching and digging should be begun. Shallow soils or soils with a stiff subsoil will be benefited by being trenched to a depth of 1½ or 2 feet, and all kinds of soils should be dug up and left rough and open on the surface. The frost and air will penetrate to a considerable distance and prove of great advantage. We do not approve of leaving all undug until the spring.

PLANT HOUSES.

Amasonia calycina.—Where this plant is throwing up its bright crimson Poinsettia-like bracts do not attempt to retard it It does not

appear to bear this treatment without direct injury. The plant itself appears capable of bearing many hardships before it finally succumbs, but during active growth or the production of its inflorescence it must have brisk heat, or else it fails to develope properly. Be careful also not to overwater it. While growing liberal supplies are necessary, but during the present time water must be applied with great care. The roots perish quickly in wet soil and a low temperature. After flowering the plant should be kept on the dry side until it is again started into growth.

Anthurium Scherizerianum.—Plants that have completed their growth should be removed from the stove to an intermediate temperature. While in this position give them less water at their roots. Plants that are still growing should be encouraged to complete their growth in the stove, when they will be benefited by a lower temperature. A. ferrierense and A. Andreanum should be encouraged to grow by keeping them in the stove, they will produce their bright flowers throughout the winter and prove attractive either in a cut state or for the ornamentation of this structure. These varieties will need less water, but be careful not to allow them to suffer by an insufficient supply.

Alocasias.—These will need less water at their roots than has been necessary up to the present time, but on no account allow them to become dust dry, which is injurious, and would soon result in the destruction of their beautiful foliage. Watch for red spider now that the supply of moisture has been diminished. If the plants stand in a rather dry position it often proves troublesome. The best means of keeping the plants free is to sponge their leaves occasionally with a weak solution of softsoap and water, or a weak solution of any favourite insecticide.

Æschynanthus.—Where these plants are grown suspended in baskets from the roof of the stove they should be thoroughly cleaned. Much injury is often done if cleaning is delayed until their flower buds are visible. All the varieties are subject to mealy bug, and this must be eradicated from them if they are to display their full beauty. Do not overwater them from the present time; in fact, they are better kept on the dry side, or else they will fail to grow satisfactorily again in spring.

Aphelandra aurantiaca Roezli.—Although useless for cutting purposes this is a charming plant when well grown, either for the front of the stove or for associating with warm Orchids during the time it is in flower. It is perhaps most effective in the latter position. This plant enjoys heat and moisture, especially during the season of growth, but after flowering keep it rather dry until cut back and started again into growth. The usual practice is to increase the stock by cuttings, but the most vigorous plants are raised from seed. Seed is readily saved if a few plants are reserved for the purpose and kept during flowering in a slightly drier atmosphere. Some of the latest plants to flower should be reserved for this purpose. Plants that will flower towards the end of January if well cared for are certain to seed freely enough. Watch for thrips, which is a great enemy to this plant.

Eranthemum Andersoni.—Few plants are more beautiful with their delicately spotted Orchid-like spikes of flowers when well grown; they are most effective when grown in 60's with one shoot only. Be careful to keep the plants free from brown scale and thrip; keep them moderately near the glass in a temperature of 55° to 60°. While in flower the plant is at home in warm conservatories, and if slightly elevated above surrounding objects shows itself to advantage. It is also very useful for small vases in rooms, and although it does not last long in such positions dwarf well-furnished plants have a choice appearance and add variety to the usual class of plants employed in such positions.

Cissus discolor.—This is often grown for its beautifully marked foliage, which can be used for such a variety of decorative purposes. Where this is the case it is advisable to have two plants and encourage one to growth throughout the winter, while the other can be dried off and rested. Keep plants going to rest rather dry until their foliage naturally ripens, when it will be necessary to prune the shoots well back.

THE BEE-KEEPER.

NOTES ON BEES.

THE PECULIARITIES OF THE SEASON.

SINCE the cold wet summer ended we enjoyed really fine weather with but two intervals of a few days until the 16th November, when one of the severest storms raged that we have ever experienced, at least so far as can be judged by the amount of damage done. We had 7° Fahrenheit of frost early in October, the thermometer standing at 25° on the morning of the 7th, but it did little or no damage to flowers. The Mignonette is as pretty while I write as it was at the beginning of August. Lilium auratum bloomed until the end of October, but not a Gladiolus flowered; and Sweet Peas, although growing freely, did not give more than a dozen blooms. Helianthus multiflorus flore pleno is still good with me. Erigerons and Doronicums are also attractive, while the double blue Hepaticas, double and single Primroses, and Polyanthuses have been blooming for the last two months. Pyrethrums, from which we expect many autumn flowers, did not grow after the first bloom was past, and notwithstanding the fine weather during September and October, Strawberry plants showed but little growth. Fruit trees and bushes of all kinds lost their leaves early, and it is to be hoped that the thickly set buds on short growths will be perfected and bear much fruit in 1889. With the exception of a few days' cold east wind in November the thermometer was never below 32°, and once only at that. The mean temperature during the end of October was as high as 55° on several occasions, and one day it varied only 2° in twenty-four hours, being 48° at night and 50° during the day. Bees carried pollen well up to the 15th November. Altogether it has been a peculiar season, and untoward as it has been, many bee-keepers have secured an average return of honey—*i.e.*, those who managed their hives on the lines so frequently advocated in these pages.

VARIOUS ITEMS.

I have read with much interest "A Hallamshire Bee-keeper's" remarks at pages 457-58, and can endorse much of what he says, but he is somewhat mistaken in my opinion regarding the "long idea hive." I have many faults to find with it. I noted these in an article several years ago, and still maintain that combs parallel to the entrance are a great mistake, and that it is contrary to the nature of bees to have them so.

In regard to taking such hives to the Heather, I stated facts, leaving your bee-keeping readers to judge for themselves which hive was the one most to be relied upon. Both sorts of hives had combs of the current year, and, as is the case in many instances, they had to be carted over a rough road, which may make all the difference between his case and ours. My cheap hive is the ideal one of "A Hallamshire Bee-keeper." As some of your readers may wish to build up a few of these during the winter months, the following will give an idea of what is wanted. As is already known, the hive proper consists of three or four body-boxes 6½ inches deep, and 14 inches square, inside measure. The stand is of the same size, but only 4 inches deep, with angled iron feet 8 inches over all. The alighting board is either hinged or held by two wire dowels, so that in transit it can be removed or folded up so as to occupy little space. The top is covered with perforated zinc, five holes to the inch. The bottom has a close-fitting shutter resting upon fillets, and a small opening is left in the centre of this shutter, which is again covered with a sliding shutter, stopping itself against a screw. This can be opened and closed in an instant, as also can the doorway. Every division, including the stand, is hinged at the back with back-flap hinges, and fastened at the front or sides with a proper hook or clamp of some sort. When sections are used and suspended to top bars, which is decidedly the best way to have and to work sections, the division holding these is also hinged, and for convenience sake is the same in every way as the body boxes. The first thing wanted when the hive is so arranged is a clamp (one does for the apiary) made from stout hoopings the width of the hive, with the ends turned down to a right angle from 2 to 3 inches, and a slot in each end, so that when a screw-nail is put in at each end when the clamp is held in its proper place, it will slide out and in easily. This will prevent the frames or sections falling out. To make the clamp more rigid screw a fillet of wood to its under side. When any manipulation is desired, or inspection wanted, undo the front hooks and turn the division back. If it be in sections the whole of them can be seen at a glance, and their state will advise the bee-keeper to proper action. The body divisions are inspected in the same manner, care always being taken that bees are not killed on letting down the division. A little carbolic acid will prevent any bees being killed if properly applied to the edges. When cutting out royal cells, or searching for the queen, begin at the bottom box first and work upwards. A stool with a few blocks of wood at hand will be found useful in all manipulations of this sort.

I quite agree with "A Hallamshire Bee-keeper" anent bees

inclining to sting when (as he described lately) Stewarton divisions are turned up bodily and boldly. I also agree with what he says about Cyprians at page 457. A crusty old man was bitten by a dog, and on the owner being informed of it replied :—"If I were a dog I would have bitten him too." So if I were a bee I should be inclined to sting many that I see manipulating bees. Cyprians unmolested are mild in temper, so much so that a little girl of mine when only four years of age could not be kept from peering into the entrance of a populous hive to learn whether the "wee bees had een', and how they could see to work in the dark," and yet she never got a sting. Syrians are at times spiteful, but are easily subdued.

I have had hundreds of imported queens, and once only did I receive a virgin one, a Syrian. I have, however, had numerous complaints from persons of virgins or crossed queens having been put into their hands, but I could invariably trace the disappointment to their own work.

Reverting to the cheap hive, your readers will observe that it is not only a first-class hive for moving about, but cannot be surpassed for general management and ease of manipulation in all that pertains to bee-keeping. It is true it is not defended from the weather, but this is no objection, as double-cased hives are objectionable in many ways, while the single-cased ones are easily and cheaply defended—defending the bees against that insidious enemy damp (if protected from the rain) better than any double-case hive can possibly do, while it is at all times trim and tidy in appearance, and with the hinge arrangement becomes the most useful hive extant, at a cost of only a few shillings when made by the bee-keeper. I may before closing observe that the hinges might be more serviceable if made with a moveable pin, and that clamps or hooks can be easily made from hooping if a bowster punch or a brace with a few twist drills be in the possession of the bee-keeper; or to go a little further, if gardeners were supplied with these and put them to a proper use they would save many a tradesman's heavy bill. Should any of your bee-keeping readers require more details regarding the hive described I shall be glad to explain it fully, as, like the correspondent above referred to, I am of opinion that moving bees about from one pasture to another will every year become more common, so that the weighty and cumbrous hives must give way to lighter ones.—A Lanarkshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

Dicksons (Limited), The Nurseries, Chester.—*Catalogue of Forest and Ornamental Trees, Evergreens, &c.*

The Thames Bank Iron Company.—*Illustrated Trade List of Boilers and other Heating Appliances.*

Kelway & Son, Langport.—*Wholesale List of Gladioli.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*E. T. H.*).—Messrs. Stuart & Mein, Kelso, N.B., is the address you require.

Herbaceous Plants (*W. B.*).—We shall shortly publish notes on herbaceous plants that will possibly be of service to you. Early spring is the best time for planting the majority of such as you appear to require.

Glass (*G. B.*).—You appear to have proved the matter for yourself, and cannot err by acting on your own experience. Either kind will answer your purpose, but one is considered somewhat stronger than the other. Mr. Philip Ladds uses the cheaper of the two kinds by the acre.

Canterbury Bells (*N. C.*).—Plant them out at once in light moderately rich soil in an open situation, but sheltered. The plants being small we should not allow them more than 6 inches' distance apart every way, otherwise they require a foot distance apart. They grow from 18 to 24 inches high, and flower from May to July.

Chrysanthemum Sport (*Thos. Winkworth*).—The yellow sport from the primrose Ralph Brocklebank is decidedly brighter than its prototype, but the example you send of this is paler than many we have seen. By all means send the new comer to the meeting of the National Chrysanthemum Society as you propose for examination by the Committee.

Show Report (*A Twenty-years Reader*).—We are obliged to you for the report, as we are to other gardeners who forward notes on exhibitions in their districts. So far from "praising yourself," it is questionable if you have done justice to your products. It is not as a rule strong men who win that covet much praise for the examples of their skill.

Plants for the Rockery (*G. T.*).—We shall be in a better position to assist you in this matter if you will state whether the rockery you wish to cover is fully exposed to the sun or in a shady position. This makes all the difference in the selection of plants. We presume your object is not only to cover the rockery, but make it as attractive as possible. If you write to us again we shall be pleased to assist you.

Horn Shavings as Manure (*J. E. O.*).—The fine shaving and dusty particles referred to are good for mixing with soil for various kinds of plants. The quality of the soil has to be considered in determining the proportions of fertilisers to be added. A 6-inch potful of the shavings to a barrowful of soil would be quite safe. This fertiliser is not quick and powerful in action, but rather steady and lasting in effect. You may try a little more for a few plants, and thus ascertain by experiment the right quantity to use with your soil.

Pruning Vines and Fruit Trees (*W.*).—Vines should be pruned as soon as the leaves can be shaken off them. You may prune your Apple, Pear, and Plum trees at once. We quite fail to understand the condition of the Vine. You say you "were advised to put as much of the rods as you could out of the top window of the greenhouse in September, so that now there is only one-fourth of the length of the rods left in the house." We did not advise you to adopt such an unusual course, and we shall be surprised if your Vine is improved by the treatment to which it has been subjected. Your adviser, whoever he may be, ought to be able to tell you what to do next. We are, however, quite willing to do so if you make the case clear to us, though we decline all responsibility for the results that may accrue under the circumstances.

Plum Trees Losing their Leaves in July (*H. B.*).—Whatever may have been the cause of the leaves falling prematurely last year, drought could scarcely have been the origin of the evil this year, especially as the soil and subsoil appear to be of a heavy and retentive nature. Are you sure that insects were not the agents of the mischief? We suspect they have had something to do with it. Your remarks that several of the Apple trees did not produce blossom suggest that the roots of your trees generally have penetrated into the subsoil, where they do not find the necessary support for perfecting good growth, including substantial leaves for elaborating the crude sap and secreting nutrient matter in the stems. If your trees are young we should carefully replant them, placing the roots in good soil, and mulching with manure for keeping them there. If too old and large for this we should remove some of the soil, add fresh, and mulch as advised for inciting the production of active fibrous roots near the surface. If you secure and retain a network of fibres there your trees will steadily improve, and retain their foliage if attacks of red spider and other insects are prevented. Dressing the stems in winter is not a safeguard against insects infesting the leaves in summer.

Vines for Planting (*Somerset*).—You are wise in planting Black Hamburghs chiefly under the circumstances. Foster's Seedling is the best grower and most certain bearer of white Grapes for ripening about the same time, though the Buckland Sweetwater produces larger berries. You might plant one of each, and if one of them fails to give satisfaction remove it and train up an additional rod from the other. They are suitable for an outside border. A Madresfield Court might succeed at the warmest and driest end of the house, but if not it could be removed and a second rod could be trained from a Black Hamburgh for occupying the roof space. A well supported Vine will sustain a crop on two rods as well as on one only. Shorten the Vines as soon as you receive them this autumn, and keep them in a very cool place through the winter, not allowing the roots to get unreasonably dry. As a rule, the more planting canes are shortened the better is the growth the first season, and it will be well to cut back to the lowest bud that will be in a light position in the house. If after planting in spring you find you have not pruned low enough, do not shorten

the cane then, but rub off some of the top buds as may be required. Leaving the canes their full length when planted is the cause of not a few failures in Vine growing.

Raising Gladioli from "Spawn" and Seed (*Bristol*).—We know of no special treatise such as you appear to require. "D., *Deal*," has often described the raising of plants from bulblets or "spawn." We have raised thousands by sowing the bulblets thinly in drills a foot apart and about 2 inches deep in free soil in the open ground in March, not disturbing the plants till a few of them flowered, then when these die down taking up the whole and sorting the corms into sizes for planting. Many seedlings have been raised by sowing in boxes of sandy loam in a frame in the spring, but a simpler plan is to sow the seed as if it were Onion seed in the open ground. Mr. J. Ollerhead of Wimbledon described his practice and the results in our columns in January of last year, and as the number is out of print his remarks are reproduced:—"Most soils will grow matured corms with a certain amount of satisfaction, even under very ordinary management; but to succeed well with seed a good friable soil is indispensable, and this should be well drained, either naturally or artificially, to carry away all stagnant or superfluous moisture which may be caused by the constant waterings necessary during the growing season. Trench and manure the ground in the usual way, except in securing some of the best decayed dung available, and keep it near the surface to feed the seedlings immediately they begin to root. I sow our seed in a well-prepared border in the kitchen garden, and as we are close on a gravel subsoil we can water our plants freely without fear of stagnation. I sow the seed in drills about 8 inches apart (just wide enough to work a Dutch hoe with freedom) about the middle of March, if the weather is favourable; if not, I leave it to the end of March. Immediately the seedlings appear keep the ground well stirred with the Dutch hoe to keep down weeds. Immediately the ground seems dry and sweet, give them a good watering with liquid manure. Even at this early stage of growth they will take liquid twice or thrice a week if the weather is dry, and as they advance in growth they will take it more abundantly—in fact, the only attention they will require will be a perpetual stirring of the soil to break the crust formed by watering, which will also keep down weeds and give abundance of liquid manure, and if this is persevered in I am quite satisfied the cultivator will be rewarded with a few spikes of flower in the same year the seeds are sown; at any rate, the writer has flowered them the first season from seed, and I see no reason why other cultivators cannot do likewise. I remember, several years ago, paying a visit to Mr. Kelway at Langport. When I arrived he expressed his pleasure in seeing me, and added, 'I have a treat in store for you—a field over a quarter of a mile long of Gladioli in full bloom.' And it was a sight well worth going to see, and this was only one of the many fields he had at that time in full bloom. While enjoying this great feast of Gladioli bloom, Mr. Kelway remarked, 'I am the only successful Gladioli grower in this country—*i.e.*, a cultivator who grows the plant from seed to maturity in this country,' and I thought he well deserved the palm. I noticed his seeds were all sown in drills, and he told me how long it took to mature the corms to flowering size, and feeling as I did so deeply impressed with the sight of acres and acres of their flowers, I determined to try my hand in working up a stock. Accordingly I secured some good named varieties to start with, saved seed, sowed it, and grew the seedlings in the manner I have described, and, as I have already stated, succeeded in flowering some of the seedlings in the same year they were sown." This record of successful practice can scarcely fail to be of service to yourself and the other "feverish amateurs" in your neighbourhood.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*T. S. B.*).—1, Red Calville; 2, King of the Pippins; 3, Cox's Orange Pippin; 4. Bringewood Pippin. Pear is Belle Epine du Mas. (*J. Lansdell*).—1, Braddick's Nonpareil; 2, Not known; 3, Scarlet Nonpareil; 4, Not known. (*F. L.*).—1. Beurré Bose; 2, Hacon's Incomparable; 3, Beurré Diel (*Beckenham*).—The Apple is certainly not Blenheim Pippin, but Hormead Pearmain. (*Jos. Harrison*).—1, Hawthorndean; 2, Cellini; 3, Winter Greening; 4. Northern Greening; 5, Golden Reinette; 6, Bedfordshire Foundling. (*Fisher*).—1 and 2, Goff; 3, Braddick's Nonpareil; 4, Golden Streak; 5, Golden Winter Pearmain; 6, Beurré Diel. (*F. J.*).—1. Thompson's; 2, Duc de Bordeaux; Nos. 3 and 6 tickets were loose in the box; 4, Beurré Superfin; 5, General Toddleben.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. M.*).—We much regret that owing to the flowers being very small and being packed in paper they were so shrivelled when they reached us as to be quite beyond recognition. The delicate flowers of Orchids require especial care in packing when they have to travel even a short distance. (*W. R.*).—1, Adiantum gracillimum. 2, Adiantum æthiopicum. 3, Nephrolepis tuberosa. 4, Selaginella Martensi. (*R. O., Sheffield*).—1, Pleione Lagenaria. 2. Lælia anceps. (*G. H.*).—1, The Abutilons are apparently seedling varieties. 2, Adiantum pedatum. 3, Too imperfect to be recognised. 4, Davallia canariensis.

COVENT GARDEN MARKET.—NOVEMBER 21ST.

TRADE quiet, with heavy supplies, especially Grapes.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Lemons, case	10 0	to 15 0
,, Nova Scotia and Canada, per barrel	10 0	22 0	Oranges, per 100	4 0	9 0
Cherries, ½ sieve	0 0	0 0	Peaches, dozen	2 0	6 0
Cobs, 100 lbs.	100 0	0 0	Pears, dozen	0 9	1 6
Grapes, per lb.	0 6	2 6	Plums, ½-sieve	2 0	4 0
			St. Michael Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	0 10	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt.	0 0	0 0
Broccoli, bundle	0 0	0 0	Onions, bunch	0 3	0 0
Brussels Sprouts, ½ sieve	1 6	3 0	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100	0 0	0 0	Potatoes, per cwt.	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen	1 0	2 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsify, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 8
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bunches	3 0	to 6 0	Marguerites, 12 bunches	2 0	to 6 0
Arum Lilies, 12 blooms	3 0	6 0	Mignonette, 12 bunches	2 0	4 0
Asters, dozen bunches	0 0	0 0	Narcissus (Paper White), 12 sprays	1 0	1 6
,, French, per bunch	0 0	0 0	,, (French) bunch	0 3	0 6
Azalea, 12 sprays	1 0	1 6	Pelargoniums, 12 trusses	1 0	1 6
Bouvardias, bunch	0 6	1 0	,, scarlet, 12 trusses	0 4	0 6
Calceolaria, 12 bunches	0 0	0 0	Poinsettia, dozen blooms	6 0	8 0
Camellias, 12 blooms	3 0	4 0	Pyrethrum, doz. bunches	0 0	0 0
Carnations, 12 blooms	1 0	2 0	Roses, Red, 12 blooms	0 0	0 0
,, 12 bunches	0 0	0 0	,, (indoor), dozen	1 0	1 6
Chrysanthemums, 12 bl.	1 0	3 0	,, Tea, dozen	1 0	3 0
,, 12 bchs.	0 0	0 0	,, yellow	2 0	4 0
Cyclamen, dozen blooms	0 4	0 9	Stephanotis, 12 sprays	4 0	6 0
Dahlias, 12 bunches	0 0	0 0	Tropæolum, 12 bunches	1 0	2 0
Enchanis, dozen	3 0	6 0	Tuberoses, 12 blooms	0 3	1 0
Gardenias, 12 blooms	3 0	6 0	Gladiolus, 12 sprays	0 0	0 0
Hyacinths (Roman), doz. sprays	1 0	1 6	Violets, 12 bunches	1 6	2 0
Lapageria, 12 blooms	1 0	2 6	,, Parme (French), per bunch	3 6	5 0
Lilium longiflorum, 12 blooms	4 0	6 0	,, (French) bunch	1 6	2 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Evergreens, in var., dozen	6 0	to 24 0
Arum Lilies, per dozen	9 0	12 0	Ferns, in variety, dozen	4 0	18 0
Arbor vitæ (golden) dozen	12 0	24 0	Ficus elastica, each	1 6	7 0
Asters, 12 pots	0 0	0 0	Foliage plants, var., each	2 0	10 0
Begonias, various, per doz.	4 0	9 0	Fuchsia, dozen pots	3 0	6 0
Chrysanthemum, doz.	4 0	9 0	Hyacinths (Roman), doz.	9 0	12 0
,, large, doz.	15 0	24 0	Lilium, various, doz. pots	12 0	21 0
Coleus, dozen	2 0	4 0	Marguerite Daisy, dozen	6 0	12 0
Cyclamen, dozen pots	9 0	18 0	Mignonette, per dozen	0 0	0 0
Dracæna terminalis, doz.	30 0	60 0	Myrtles, dozen	6 0	12 0
Erica hyemalis, doz.	12 0	24 0	Palms, in var., each	2 6	21 0
,, gracilis, doz.	9 0	12 0	Pelargoniums, scarlet, 12	3 0	6 0
,, various, doz.	8 0	18 0	Poinsettia, per dozen	12 0	12 0
,, viridis, doz.	12 0	24 0	Primula, per doz.	4 0	6 0
Euonymus, var. dozen	6 0	18 0	Solanums, doz.	9 0	15 0



SHEEP MANAGEMENT.

THE importance of sheep as a factor to success in farming has obtained more general recognition, and has been turned to better account than most other points of good husbandry. But like other good things it is liable to abuse, and there can be no doubt that there is a serious annual loss of sheep through carelessness or mismanagement. Perhaps our most considerable losses occur among ewes and lambs, and it cannot fail to be useful to call attention now to some of the causes of such losses, upon the sound principle that prevention is better than cure.

To have strong healthy lambs it is of primary importance that the ewes are well bred and well fed. Careful attention to diet

only while the lambs are with them with not sufflee ; they must be kept in good condition the year round if their progeny is to be as robust as it ought to be. Let us see how this can be done. When the lambs are weaned in June the ewes are turned upon pasture that is poor rather than rich, the object being to keep them upon a low diet till milk ceases to flow, and the risk of swollen, sore, or broken udders is past. By that time, too, any wounds caused by the wool-shearing will be healed, and they are dipped in Cooper's Dressing, which not only destroys ticks and other insects, but renders the sheep comparatively safe from the attacks of fly during the hot summer months. However well and carefully we may feed suckling ewes, a strong lamb or twins will bring down condition, and we must try and restore it as soon as may be, for the ewes have barely two months before they are again put with the tups. Upon arable farms they are folded upon Tares, Clover, Sainfoin, Lucerne, or Mustard, and where there is sufficient pasture nothing can be better for them than a full diet of grass. They receive no other food till after harvest, when they are taken upon the corn stubbles. Some care is requisite in doing this, more especially upon Barley stubbles, for the sheep eat the corn so greedily that losses occur from stoppage if they are allowed to eat the fallen ears of corn to repletion.

With the exception of the stubble corn they have nothing but green food, nor do they require it till a month before lambing begins, when they receive half a pound of crushed Oats per head daily. After the lambing, and till the lambs are weaned, the quantity of crushed Oats is increased to a pound per head daily. A piece of rich pasture is kept in reserve specially for the lambing, and there is a careful addition to the dietary of Mangolds, chopped Barley or Oat straw, and Pea straw in racks according to the weather and condition of the pasture. Cattle Cabbage and silage may then be included in the dietary with advantage, but neither white Turnips nor Swedes are used till after the lambing. We never allow pregnant ewes to be folded on Turnips, knowing how frequently the practice leads to serious losses of the ewes, and also of lambs by abortion. The evil of such folding is threefold. The effect upon the ewes of the consumption of large quantities of food containing so large a percentage of water—80 per cent—always then at a low temperature, often half frozen, is to lower the temperature of the body to a degree that is hurtful to the ewe, and often fatal to the fœtus. The second evil arises from the strain made upon the animal in making its way through the muddy fold where the soil often becomes churned into mud, reaching half way or more up the sheeps' legs, and in heavy land such mud is so tenacious that they can hardly withdraw their legs from it, and certainly cannot lie down to rest, for if they were to do so they would hardly be able to get up again. The third evil is the exposure and the heavy strain upon the entire system of the ewe precisely when it requires protection from everything at all calculated to prove injurious to health. No doubt the sheep is a hardy animal, but there are limits to its powers of endurance, and it is wiser by far, instead of running the risk of loss from such exposure, to avoid it, at any rate to a hurtful degree.

Before proceeding farther with ewe treatment, we may usefully here revert to the question of dipping. No doubt the dipping should always be done in summer after the shearing and weaning, both to ewes and lambs as we have explained, but it is by no means so certain that there should be a second dipping in autumn. We have had it done with material advantage when the wool is at all infested with parasitical insects, and this can be ascertained by a close inspection and a little watchfulness. We once purchased a flock of sheep so late in the year that dipping was out of the question, yet they were so badly infested with ticks that they were constantly rubbing themselves, and they did not get into a thriving condition till we were able to get rid of the ticks, which was not for some months.

(To be continued.)

WORK ON THE HOME FARM.

The wisdom of keeping a fair proportion of the land under Wheat is well illustrated just now, for most of the Barley was so much discoloured by the rain which fell so frequently after the grain was fully developed, that prices are exceptionally low. The highest price we have obtained is 32s. per quarter. We have a large quantity to sell, and put our average price for it as low as 26s. This to us is a serious matter, yet we have the satisfaction of being able to sell good samples of white Wheat at from 36s. to 40s. per quarter. Much care and caution has to be exercised in Wheat threshing now, and any stack where the corn proves at all soft should not be threshed till spring. This may eventually prove advantageous, for prices are almost certain to improve with the advance of the season. Those who possess facilities for kiln-drying corn will certainly find it answer the purpose now when hard foreign Wheat is from 6s. to 8s. per quarter higher than home grown Wheat.

As the sowing of winter corn is finished the ploughs are put upon other land in order to get as much as possible ploughed before severe weather sets in. Some land ploughed during harvest has now been cross-ploughed with douhled breasted ploughs and thrown into ridges, where it will remain till it is required either for spring corn or roots. Land that is so treated now always comes to hand in splendid order in spring, and the process of sowing spring corn in it is a speedy and satisfactory undertaking. It is said that land so exposed to the influence of winter weather loses a certain or uncertain per-centage of nitrogen. If this be so, the advantages, on the other hand, are so great that autumn culture commends itself to all good farmers. Only have sufficient drainage to carry superfluous moisture off quickly, throw up the land roughly to expose it to the action of the weather, and we can then easily and profitably restore any small loss of fertility. Economy is good, by all means let us practise it, but depend upon it there is very little to be gained in trying to reduce loss or gain upon the land to fractions. A little common sense here is just as desirable as it is in most things ; do not let us forget this.

WEBB AND SONS' ROOT CROP COMPETITION.—A large number of agriculturists competed for the valuable prizes offered by Messrs. Webb and Sons, of the Royal Seed Establishment, Wordsley, Stourbridge, for roots grown from their seed and with the aid of their special manures. Mr. Edward Bennett, farm steward to the Right Hon. the Earl of Dartmouth, Patshull Farm, Wolverhampton, who officiated as Judge, has made his awards as follows :—Class 1.—For 5 acres of Webbs' Imperial Swede grown with the aid of Webbs' special manure in the counties of Salop, Hereford, Montgomery, Stafford, Warwick, Oxford, or Leicester. First prize, value £15 15s., Mr. A. Streeton, Wichnor, Burton-on-Trent ; weight per acre, 37 tons, 0 cwt., 2 qrs., 24 lbs. Second prize, value £10 10s., Mr. W. Humphreys, Evenall, Oswestry ; weight per acre, 31 tons, 5 cwt., 2 qrs., 24 lbs. Third prize, value £5 5s., Mr. F. Kihbler, Wellesbourne, Warwick ; weight per acre, 31 tons, 5 cwt. Class 2.—For 3 acres of Webbs' Mangolds—any one variety—grown with the aid of Webbs' special manure in the same counties as class 1. Prize, value £5 5s., Mr. R. Harvey, Darlaston, Stone ; weight per acre, 45 tons, 13 cwt., 2 qrs., 8 lbs. Class 3.—For 5 acres of Webbs' Imperial Swede grown with the aid of Webbs' special manure in the counties of Worcester, Gloucester, or Cheshire. First prize, value £10 10s., Mr. A. G. Potter, Leigh Court, Worcester ; weight per acre, 35 tons, 5 cwt., 2 qrs., 24 lbs. Second prize, value £5 5s., Mr. A. Hocknell, Newtown, Audlem ; weight per acre, 30 tons. Class 4.—For 3 acres of Webbs' Mangolds—any one variety—grown with the aid of Webbs' special manue in the counties as class 2. Prize, value £5 5s., Mr. J. Pocock, Twigworth, Gloucester ; weight per acre, 58 tons, 18 cwt., 2 qrs., 8 lbs.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. November.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 11	29.845	46.1	45.9	N.E.	43.3	48.2	39.4	50.0	36.8	—
Monday 12	29.751	47.3	47.0	N.E.	44.5	53.0	45.0	54.6	39.3	0.173
Tuesday 13	29.406	52.6	50.5	S.E.	46.0	55.6	48.2	75.0	44.7	—
Wednesday .. 14	29.929	49.4	49.2	S.	46.0	56.2	44.6	74.0	36.0	0.010
Thursday 15	30.143	51.9	50.3	S.	45.8	58.8	49.4	60.2	44.5	0.062
Friday 16	30.181	48.3	45.9	S.	48.2	59.9	51.4	64.0	50.2	—
Saturday 17	30.067	51.2	47.2	S.W.	48.6	54.7	46.7	72.4	40.6	0.038
	29.849	51.0	49.4		46.2	55.2	46.4	64.5	42.2	0.283

REMARKS.

11th.—Dull, foggy, and damp throughout.

12th.—Dull cloudy day, wet evening.

13th.—Fair morning, with occasional gleams of sun, bright afternoon and night.

14th.—Fine and generally bright.

15th.—Dull and rainy.

16th.—Overcast and windy morning, slight shower about 2 P.M., fine afterwards.

17th.—Fine and generally bright day, shower in evening. Fine lunar halo at midnight.

A cloudy and rather damp week. Temperature above that of the preceding week, and 6° above the average. This is the greatest excess in any week since February.—G. J. SYMONS.

THE VINERY IN WINTER.

A WEEK rarely passes in which questions relating to Vines are not sent to the Editor, whose guidance is sought on various points connected with their management. This shows, if anything can, that well as Vine culture is admittedly understood by many persons, there are still more in doubt as to the best methods to pursue for gaining the desired end—healthy fruitful Vines and fine bunches of their coveted fruit. It is not for teaching the learned that the *Journal of Horticulture* exists, though these delight in its pages and enrich them by their contributions; but for conveying information that may be of service to the inexperienced, whether these are gardeners in difficulties, and whose livelihood depends on the surmounting of them, or amateurs whose gardens give them pleasure, and not the less because obstacles are occasionally met with and overcome. It is wonderful how much enjoyment can be derived from a vinery by those who delight in growing Grapes when all goes right; but on the other hand, when things go wrong in some perplexing way, the anxiety is correspondingly great. The real lover, not of Grapes as such, but of growing them, takes pride in his Vines at all times—in winter as well as in summer. He can see in the hard brown canes, bold firm buds, pithless wood, and general cleanliness much to admire, knowing that such conditions are precursors of success.

Good work can be done in the vinery at this season of the year, and ought to be done without needless delay. It may not be so urgent that important outdoor work should be neglected when the weather is favourable for its prosecution; but days unsuitable for profitable outdoor occupation have not usually to be long waited for at this period of the year, and when they occur prompt action should be taken to put Vines and vineries in order for the winter and spring. The work here should be thorough as regards cleanliness, more especially when the Vines have suffered from the attacks of insects, no matter of what kind, in the summer. Those pests are to a large extent the outcome of neglect or inaction on the part of cultivators in winter. Too many are content with half cleansing their Vines and vineries. Where that most objectionable insect—the mealy bug—is prevalent, as it is in hundreds of vineries, it is not possible for the work of cleansing to be too exhaustive. A mere washing of exposed surfaces is wholly insufficient. Those that are hidden must have at least equal attention, and indeed more time must be spent on them than on the parts in sight. Every chink and nook must be sought for, for these are the hiding places of the enemy. Every particle of refuse, every empty flower pot, every bunch of sticks and matting must be cleared out. Every plant infested at branch or root must be rendered absolutely clean, or it should have no place in the vinery. Clean plants do no harm to Vines, though the Vines often do harm to them; but as the plants are moveable and quickly producible, while Vines are not, there ought to be no difficulty how to act in an apparent conflict between them as regards their requirements. When good Grapes are expected the Vines must be the first objects of consideration; and the better their wants are supplied the better possibly will the plants flourish that are suitable for growing in the structures, and those that are not suitable have no business there, as they cannot be cultivated satisfactorily, and attempts to provide what they need may result in injury to the Vines that are of immeasurably greater value.

"But why connect plants with the subject?" some reader may ask, on the ground that they are better in houses to themselves, leaving vineries for the production of Grapes alone. Granted, the advantages of the separate system, yet the fact has to be recognised that the combination plan is forced by circumstances on the great majority, and the majority cannot be ignored in or out of Parliament, but has a way of asserting itself and commanding attention. Facts, then, have to be dealt with, and there is no doubt about the existence of this one at least—that where there is one vinery free from plants always, there are twenty crowded with them over the greater part of the year. What, then, is to be done in vineries now under those circumstances? That is what many an anxious gardener—or man in charge of Vines—(for there is a difference), and many a zealous, but not over-experienced, amateur wants to know. They can only be told generally, for there are peculiar conditions requiring peculiar treatment, and obviously this cannot be suggested till the exact circumstances are known. Those, persons, therefore, who do not find what they want in these notes will know what to do—namely, state their case, objects, and means at disposal clearly, and someone will be almost certain to come to the rescue and endeavour to be helpful.

As regards work in the vinery generally which at the same time contains plants, and the leaves of the Vines changing, also more or less infested with mealy bug, as thousands are, are we to wait for those leaves to fall before taking steps to extirpate the enemy? Certainly not. It is true numbers of Vines have cast their leaves, and these cannot be pruned too soon; but many have not done so, as the leaves of not a few are "hanging on" longer than usual this year. When these leaves are turning yellow or brown, and are at the same time supporting insects, it may be in myriads, they should be taken off and burned. Allowing the leaves to wither and fall, as is customary, amongst plants or on the floor or stages, is the best possible way of distributing those insects and of insuring a greater abundance of them another year. Not one infested leaf should be allowed to fall, but before they wither sufficiently for that, all should be removed, not tearing away the stalks entirely, but snapping off the leaves alone. In this way a horde of insects may be cleared away, and more execution done in an hour than can be accomplished by days of after labour when the insects are allowed to be scattered in the house. Some persons hesitate to remove the changing leaves lest the Vines may be injured or deprived of something which it is vaguely thought the leaves secrete in them. There are no substantial grounds for any such fear of injury resulting from taking off the leaves a week or so before they would fall naturally. They have done their work then, and the removal of them when quite yellow deprives the Vines of nothing but insects, and that is a great deal. Complaints of the presence of mealy bug on Vines, and in bunches of Grapes, have been so numerous during the past two or three months, that decisive action is imperative for the extirpation of the scourge; and in no other way can this be so effectually accomplished as in the simple manner indicated.

A week or ten days after the fading leaves are removed the Vines will be ready for pruning. Possibly a little moisture may exude from the "cuts," but no alarm need be felt on that score. It will only amount to mere dampness, for it will be a wonder if a drop forms and falls, and if it did there would be nothing to fear, for the "loss" would be infinitesimal, as it would consist of water, nothing but water. Immeasurably greater harm is done to Vines by deferring the pruning too long, than by completing it too soon after the leaves fall, or are removed when withered as suggested.

After pruning comes the work of cleansing the Vines, the plants, and the house, for it is of small use doing one without the other. Each plant should be examined carefully, and if there is a suspicion of insects, should be laid on its side and drenched—syringed over and over again with an insecticide. It does not much matter which or what, provided it is forced through the syringe at a temperature of 130°. If insects remain alive after the application, it will be

the fault of the operator, and proof that the work has not been well done. But the syringing is not all that may be required, for the soil often contains many insects, especially when through careless watering it is half of the time too dry ; the drainage may then be full of them and the roots encrusted. In that case the best plan is to destroy the plants, the next best plan to stand the pots over their rims in water for twenty-four hours. No doubt the plants may then have more water than is good for them ; but when it is a question of too many insects or too much water, the latter is certainly the lesser of the two evils, therefore the one to be best endured.

In endeavours to banish insects from vineries, and especially the woolly coccus, it is questionable if half sufficient attention is paid to the soil, particularly dry soil, in pots and borders. That is their place of refuge, their nursery, their natural hybernating medium, from which they emerge in due time, and pursue their career of devastation. Space, however, is at present exhausted, though the subject is not, and may possibly be resumed another day.

PLUMIERIAS.

As the culture of Plumierias has not been described in the Journal, we applied to a gardener who had grown and flowered these plants to favour us with a few hints on their management. His reply is as follows :—

Having had during the last four or five years plants of the above under my charge, I was pleased to see the beautiful illustration and accompanying remarks in a recent issue of the Journal, and as requested readily describe the mode of culture pursued by me. In Miss North's museum at Kew I recollect noticing a painting of P. rubra, at least my impression is that it was rubra, and in a description of it there are some interesting remarks, if my memory serves me right, to the effect that at a certain stage of the flowering season in its native home a large caterpillar appears and devours the flower, and in the painting referred to is represented as creeping towards it. To lovers of sweet-scented flowers this plant will be appreciated, as the perfume is delicious. I have found that a stove temperature is necessary to grow and flower it satisfactorily, then if proper attention is afforded as regards watering and compost, not much difficulty may be experienced in its management. Good turfy loam three parts, with one of well-decomposed manure, a dash of silver sand, and a few pieces of charcoal suits its admirably. After the flowering season, which generally occurs during August and September, and when the foliage commences turning yellow, water should be gradually withheld, and when the whole of the leaves have left the plant may be withheld altogether for some weeks, care being taken that the plants are out of the way of drip, as during the cold season if kept too moist, they are almost certain to decay at the soil level, and if decay once sets in it is no easy matter to arrest it, on account of the fleshy nature of the stems. In early spring, or when signs of growth appear, the plants should be shaken out, removing a portion of the old soil after the manner of shaking out Fuchsias, and indeed a compost that will grow Fuchsias will suit Plumierias. Water should be applied with much caution for some weeks until the roots have taken well to the new soil ; the supply may then be increased, and when in full and vigorous growth occasional applications of soot water will be of much benefit. The plants should be shaded from bright sun, and it is essential to use the syringe very freely, as aphis, thrips, scale, and mealy bug all seem to be much enamoured of the succulent nature of these plants, and must be guarded against accordingly, or the handsome green leaves will soon be bereft of their beauty, and the chances of the plants flowering freely be very remote.

To propagate, I have found it best to stand the stems erect by the aid of a small stick on the surface of sandy soil or cocoa-nut refuse, and not insert the cuttings, as they are very apt to damp if the latter method is adopted. The striking material should be moderately dry.

PLANTING FRUIT TREES.

If possible secure your trees from your own district, provided you can get them healthy and true to name. If you know a healthy properly trained tree when you see it go to the nursery and select for yourself, but if inexperienced in the matter get a practical gardener to select for you ; but send early, or all the best trees may be gone. Trained trees for walls should be properly balanced with not only an equal number of shoots on each side, but as nearly the same strength as possible. Look well to the bottom branches—they should be stronger than the upper ones—a desideratum rarely secured in nursery-trained trees. The fact is, too much is attempted in one season, for if nurserymen would be content to establish three good shoots instead, as is often the case, nine or eleven, it would be better for the future of the tree. It is impossible to establish the bottom branches of a trained tree unless it is done before the upper ones are formed, hence the importance of giving them at least one year's start. This principle also holds good for pyramids. The tendency of sap is upwards, therefore to divert it from that course some strong attraction must be provided from the beginning, and this we can only secure by establishing fewer branches the first year.

The trees must not be out of the soil longer than is absolutely necessary ; therefore prepare the sites for them before they come, so that there may be as little delay as possible. Let the tips of every root of any size be cut off clean with a sharp knife, and if any of the strong roots be bruised, or in any way damaged, cut them clean off behind the injured parts ; they will then throw out numerous small roots such as will be of real worth to the tree. On lifting a Glou Morçeau Pear the other day which had never been satisfactory, we found it had been planted without pruning the mutilated roots, and consequently they had neither healed nor thrown out fibrous roots, but were covered with numerous knotty swellings resembling club-rooted Cabbage. It may not be necessary to tell some people not to plant too deeply—no deeper than the trees were in the nursery ; but, alas ! everybody does not know it, and until they do there can be harm in reiterating so simple and important a truth. I called upon a farmer friend a few days since, who, I found, had just purchased some standard Plum trees for planting in one of his fields. His man has just planted one, which I found he had done in much the same way as he would a straining-post for a wire fence, with this exception, that a hole 6 inches deep was left to be filled up with manure.

To plant deeply in any soil is to court failure, but to plant deeply into a strong clay such as the above was, is to especially provide for complete failure, as you simply plant your tree in a hole that will be full of water half the year, and that will soon make short work of your trees. In such heavy soils far better results would follow from fetching a load of soil and planting on the surface, provided they were well staked and mulched with littery manure.

Plant, if possible, when the soil is moderately dry, and on no account do so if it be very wet, as that alone is sufficient on heavy soils to render your prospects abortive. After carefully spreading the roots out straight, scatter the finest soil over them, not burying all the roots in one layer, but in several layers, with a covering of soil between each, and after covering the top layer about 3 inches, well tread it down and level the surface. All, with the exception of wall trees, should be well staked when planted, and a mulching of half-rotten manure will benefit trees of all forms.—J. H. W.

ABUTILONS.

Those who can afford space to grow some of these plants either to cover a wall or trained under the roof of a greenhouse or conservatory I would advise them to try planting out. Given a suitable soil and rooting space, with an intermediate temperature, they grow very fast and soon cover a large space. When rightly managed they are for the most part of the year in flower, but if wanted for winter flowering, for which they are very suitable, a more limited rooting space will be found to answer best. When established the difference must be made up to the plants by plentiful waterings and judicious feeding. Thinning the wood when too thick and training the remaining shoots improve the plants by preventing uneven or coarse growth, so detrimental to the other parts of the plants. I admire them in pots when well grown, as they flower freely, and I grow a good number in that way ; but although useful and ornamental they do not afford sufficient flowers for cutting, whereas those planted out give them by hundreds.

Our conservatory here joins the house, and is 45 feet high and the same in width between the wall of the house and the hot-water pipes, which are arranged below the floor of the building. There is a border 4 feet wide and the same in depth, running nearly the whole width of the house. In this border is planted one plant of Abutilon Boule de Neige, one of A. Thomsoni, and one of Canary Yellow. The first-named plant has quite outdistanced the others and covers the whole space, is perfectly healthy and flowering abundantly. The plant flowered equally well last winter. The foliage of A. Thomsoni being variegated, is a pleasing contrast to the dark green of the other one. Last week my employer counted flowers up to 2000 and left hundreds more.

I will state briefly how the plant has been treated, our object

being to flower it during the principal autumn and winter months. During June and July the plant is allowed to run rough, and is kept rather dry at the roots, but not sufficient to do harm to the wood and foliage, affording plenty of air night and day in order to ripen the wood and give the plant a rest. About the beginning of August the necessary pruning is done by cutting out many of the gross shoots, thinning others where too thick, and laying in sufficient to well furnish the wall. Then a few inches of the surface soil of the border is removed and replaced by a mixture of two-thirds loam and the other leaf soil, and made very firm. Then a thorough soaking of water is given at two or three different times to make sure the whole is well moistened. The plant soon starts into growth, and in a short time produces flowers, which it will continue to do more or less the whole winter. As all the Abutilons make roots freely when in a confined space they soon ramble through the whole mass of soil; therefore weak manure water should be applied once a week, and other waterings as often as required, in order to keep up the vigour of the plant.

The flowers, when cut, are arranged in shallow vases with sprays of Asparagus plumosus intermixed, and they have a very pretty effect. Green fly is liable to attack the young growth, and to prevent that as much as possible, I syringe the plant heavily occasionally with clear water from the garden engine, the small syringe is not powerful enough to dislodge them; no fumigating being allowed in the conservatory.—THOMAS RECORD.

THE FRUIT ROOM.

IT is certainly much to be regretted that although most structures intended for horticultural purposes have received their full share of attention, and the most approved modes of erecting them have been at times ably discussed in this Journal and other gardening works, the fruit-room has scarcely ever received a passing notice. Assuredly this cannot arise from the indifference with which it is regarded, for it is of the utmost possible importance; but somehow fruit-rooms, generally so called, form such uninviting features in most gardens that they are never visited by fashionable company. That this should be the case is unfortunate, for a good collection of Apples and Pears in the month of November is as well worth inspecting as anything the plant houses contain at that time; but when a makeshift of a shed, or some hovel of no longer any other use, has to be put in requisition for the purpose of keeping fruits, those having the management of it naturally shrink from inviting anyone to see their collection when huddled together in such humble quarters. They nevertheless manage now and then to keep their fruit pretty well in such houses or sheds, and not unfrequently better than is sometimes done in structures of greater pretensions, and we are, therefore, led to inquire if there is not something wrong with the latter, and a careful investigation into the matter confirms the suspicion that this is really the case. The subject of keeping winter fruit being so important, let us examine the elements which either lead to success or the contrary.

When we look into the mode which Nature adopts to insure the reproduction of each species, we find that all seed-vessels or receptacles have a function to perform, and when this is accomplished they perish. Some seeds are scattered abroad by the bursting of the seed pod, and by a jerk thrown some distance. Others are clothed with down, and dispersed far and wide by the wind. Others depend on their removal being effected either by birds, animals, or some similar agency, and of such, perhaps, the Apple and Pear may be accounted examples, while they also exhibit the seed enclosed in a fleshy substance capable of resisting decay for a greater or less period—in the wild ones, certainly until the proper time for depositing the seed in the ground; and assuming the fruit to fall where it is grown, the conditions for its keeping are prepared for it by natural means. Dead leaves and herbage form a sort of nest as well as a covering, securing the preservation of the seeds until the appropriate time for their being deposited in the earth. Our object, however, is the preservation of the fruit, and the seed is no further regarded than as being a component part of the fruit; but as Nature has shown us that a cool and far-from-dry medium serves all the purposes of keeping the fruits spoken of through the inclement part of the winter, we may not be far wrong in copying to a certain extent some of the conditions thus laid down.

It being shown that a cold medium is the best to prevent decay in the fruit now under consideration, the question arises, How is a cool atmosphere to be obtained? To a certain extent we have but little control over the temperature, for though we might increase that of the atmosphere of the room, we cannot easily diminish it; but something may be done in the latter way, or, at all events, the evils of overheating our fruit-rooms may be avoided. To crowd a house with Apples and Pears in the warm weather of the early part of September is making it little better than a pest house, especially if there be very little ventilation; for the quantity of fruit lying in so confined a space engenders heat, or, what is equally bad, vapours are given out that are anything but favourable to the preservation of the fruit. Yet how common it is to crowd the fruit-room so early in the season. Apples keep falling, and birds and wasps attack the Pears, and, consequently, there appears to be no alternative but covering the shelves with fruit, perhaps three or four thick. Ripening takes place with more or less rapidity in consequence of the forcing to which the fruit is subjected, the close stifled state of the room, and the warm condition of the external air hurrying on the ripening

Assuming, therefore, the position in which Nature often deposits her fruits to be on the whole favourable to their keeping (and we often see that an Apple which has fallen softly amongst long grass or other herbage exhibits as high a state of preservation when found there in winter as others of its kind when housed in the ordinary way), we are led to consider that plenty of fresh air is by no means unfavourable to the keeping of such fruits. On this account, therefore, our fruit-rooms ought to be well ventilated, and they ought not to be too low, or if from circumstances they must be so, they should be ventilated at the top as well as at the sides and ends. The best form for a fruit-room when it stands alone is an ordinary span-roof, laid on dry—that is, not embedded in mortar in the usual way; below the rafters the roof may be ceiled halfway up following the inclination of the rafters, with a flat space of some 3 or 4 feet in the centre, in which a latticed ventilator may be fixed, the latticework very open, and extending the whole length of the room. There should be a sort of contrivance for closing the latticework—a board, say on hinges, like a long trap-door. This is better than sliding latticework, as the latter is apt to get out of order, and is not easily moved. The tiles, being open, will allow all vapours that find their way into the apex of the roof to pass through, and the ventilator will only require closing in severe weather. In dry situations it would also answer as well to have the house partly under ground, say 3 feet or so; this tends to keep the temperature more equal, and in the hot dry weather of the dog-days is certainly a relief from the heated air outside. The side and end ventilators may be of glass, not allowing, however, any windows to the south, and for the same reason it would be better if the building were shaded from the mid-day sun in that direction, buildings being better for that purpose than trees. The situation ought also to be unconfined, and free from all noxious vapours and damp exhalations. The internal fittings might be in the usual way, a series of shelves all round, and a table shelf in the centre, and if the latter had drawers in it so much the better. The shelves ought not to be too close above each other—four or five in a tier is quite plenty—the highest one being at least 7 feet from the ground. It is customary to make the shelves partially open, but I am not certain that this is required. One of the best-keeping fruit-rooms I ever had to deal with had slate shelves, close and impervious. Care, however, was required not to allow the fruit to tumble about on a shelf so hard. I am no advocate for straw, or anything of that kind, under the fruit.

There are many conditions in which fruit has been kept tolerably well, and for a long period. A cool cellar is not by any means a bad place, only the quantity ought not to be large, or ventilation must be obtained; but the currents of fresh air that are wanted in September may in a great measure be dispensed with in December, or, at all events, much less will do. A cellar is better than a great many fruit-rooms. I have also retarded some fruit in an ice-house and kept it later there than it would have kept in another place, but the propriety of retarding fruits, excepting for special purposes, is much questioned; certainly the flavour is deteriorated. I have also seen a quantity of Apples buried in the ground like Potatoes. This was merely for an experiment, and the result was that many of them burst, much the same as a Potato will when boiled with the peel on. Keeping them in a chalk-pit or cave approaches so much to the cellar that it may be classed as the same. Sheds of all kinds are used to store Apples in most places where they are grown abundantly, and in Kent thousands of bushels are kept in heaps on the floor of the hop-drying kilns, which, being lofty and airy, are by no means bad places. The great misfortune is, the fruit often laid in heaps from 2 to 3 feet thick, and a little straw thrown over it in severe weather. Keeping Apples in air-tight boxes or jars has been abandoned of late years, and casks of various kinds are occasionally used, but more frequently for transporting fruit than for storing it away. Although Apples will occasionally keep a long time under conditions different from those now given, it is not to be inferred that these methods are better, as the fruit might, perhaps, have kept a little longer if fairly tried in the way described.

Before closing these remarks I may observe, that as fruit

ripens earlier in certain seasons than in others, and in some is charged more abundantly with those juices which promote decay, the keeping is not always alike, even when attempted in the same way. A well-perfected fruit may be as forward one season by the 1st of September, as it will be in another by the end of the same month; while it is almost needless to observe that the ripening, and, consequently, decaying influence of a warm month like September tells more than an equal length of time later in the year. It is not too much to say, that the thirty days in September ought to be accounted equal to the fifty days that next follow, taking, of course, average seasons. Hence, fruit that ripens so much earlier than usual has but a poor chance of keeping well if the weather be warm. Those, therefore, that want to prolong the season of any particular fruit must keep it as cool as they can, and success will be in accordance with the reduced temperature, all other conditions being favourable. In a general way, the place most conducive to the good-keeping of fruit is similar to that which preserves milk—one with a cool atmosphere and abundant ventilation, and free from all vapour, bad smells, and stagnant air of all kinds. In fact, a fruit-room ought to be as sweet as a dairy.—J. O.

PLANTING AND TRANSPLANTING.

Generally speaking the removal and planting of trees and shrubs is an operation to be performed in the months of September, October, and November, according to orthodox rules. But, then, as regards myself, I happen to be one of those self-willed individuals who follow no conventional rules in connection with garden operations, and as gardening is a matter of business with me the fraternity will probably stigmatise me as perverse and headstrong. Be that as it may, whenever I find it desirable or necessary to remove and transplant trees or shrubs, and I have a convenient opportunity, I put aside all considerations as to the time of year, and submit only to the negative dictates of frost and much wet. I have transplanted trees and shrubs in the middle of summer and in the middle of winter, in spring and in autumn, the after-treatment, of course, being influenced by the weather, and never have I found that the success or failure of the operation could be directly or indirectly traced to the mere season of the year at which it happened to be performed.

This assertion may be diametrically opposed to the opinions of many of the most able and experienced gardeners. I nevertheless adhere to it, and even deny that the best time to remove trees is when there is plenty of moisture in the ground; in other words, when there is sufficient moisture in the soil to cause it to hold together in solid spits. I like it best when it will crumble and run in among the fibres and roots, and this I find it will do best in the summer time, when the ground is comparatively dry. Much, I am aware, depends on the nature of the soil, and if it is naturally crumbly and light probably the best time to plant trees in it is the autumn or winter; but even this I will not venture positively to assert, for I have invariably found that, no matter what the soil is, newly planted trees are likely to do best when the roots start into action immediately after planting. This is certainly not done in the winter unless the season happen to be unusually mild; and although the trees may sustain no injury from remaining a long time inactive it does not disprove what I affirm.

Some years ago I assisted in removing a number of evergreen shrubs from one garden to another: they were taken two or three at a time on wheelbarrows to a distance of about half a mile, and the weather was both hot and dry, the period of the year being about midsummer. As each was planted a basin was formed around it, the soil being in a crumbly state. This basin was filled up twice with water, which seemed to run the soil in amongst the roots, and leave them as though they had never been removed. They took to the soil immediately, and I never knew fresh-planted shrubs do better. I thought at the time that it was incurring too great a risk, as the shrubs were fine specimens; but the result proved that all my fears were groundless, and if since then I have had occasion to remove trees or shrubs at any period of the year I have never hesitated to do so. The weather subsequent to the operation will suggest such precautions as are necessary to insure safety—that is, in the way of shading, syringing, mulching, or watering, and staking in case of high winds. These precautions are often necessary, and the neglect of them is more frequently the cause of failure than the supposed wrong time of the year.

I would not, however, have it understood that I am advocating summer planting in preference to autumn or winter planting. There are cases in which it would be entirely out of the question to perform such operations in the summer on account of the pressure of other work; nor does what I assert affect this matter in the least. What I would recommend is not to be bound by usage, nor to be led by would-be clever theorists, who describe minutely how the tree should be taken up, how the hole should be dug, how the soil should be trodden over the roots, the month, the week, or even the day on which transplantation should be performed, and such matters of detail as are far better left to the discretion of the operator.

Many gentlemen lay out large sums of money in the purchase of trees and shrubs, and make extraordinary mistakes in the planting and disposition of them, simply, it appears to me, for want of a few practical lessons, and partly, perhaps, from being unacquainted with the nature of the trees which they plant, or their knowledge being confined to the simple fact that trees should be planted with their roots downwards. This is rather a limited knowledge of vegetation; but judging from the manner in which many trees are planted one would think that it was also the extent of the knowledge possessed by the planter. For instance: a gentleman owns a field or paddock, and desires to have a belt of trees round it. He goes or sends to a nursery for one or two hundred young forest trees, and they are planted, the turf being replaced close around their stems. While the owner is congratulating himself on the pleasure he will experience in soon having a plantation of vigorous young trees, some of them are dying, and the rest do not grow. How is this? The nurseryman who supplied them is blamed; it must be his fault in supplying bad trees. What else can be the reason? Trees are pointed out as growing vigorously in neighbouring fields, with the grass extending up to their trunks, just as he would like his own to be, and he cannot see why they should not. Now, I would simply inform him that the grass growing under an old-established tree is merely there on sufferance, the tree has the mastery, and will not allow the grass to attain more than a certain degree of strength; but with fresh-planted trees the case is different, the grass pushes out fibres long before the tree, and the roots are down among those of the tree before the latter have made a single fibre. In fact, the grass abstracts all the moisture from the ground at the time of the year when the tree requires it most, so that the latter is left to starve, consequently it does not grow. The gentleman, however, cannot see this, and blames the nurseryman; but if he will take a useful hint, and look nearer home, he will find the remedy. When the trees are planted let the ground be kept bare of herbage as far as the roots extend, and this until the trees are thoroughly established.

In another case the trees are planted in gravel or sand, and in this they cannot grow for want of nutriment. The nurseryman cannot very well be blamed in this case, for the cause of failure is obvious, and the want of success is at once attributed to it. In consequence of this discovery the owner orders the surface of sand or gravel to be removed, and two spadesful of strong manure to be placed close to the stem of each tree; or he orders each to have half a pailful of good strong liquid manure; so they are poisoned, and eventually succumb to their fate. Possibly the gentleman employs a gardener who well knows that liquid manure beyond a certain strength will injure, perhaps kill, his Cabbages, and he will possibly suggest that the stuff might be a little too strong. Well, then, the gentleman will buy more trees, and treat them to liquid manure in a weaker state; but even then somehow or other they do not grow. Now, I would suggest that newly planted trees have neither the mouth to imbibe or the stomach to digest liquid or even solid manure, and that trees require plain soil to fibre into: consequently if a good-sized hole had been made in the gravel for each tree, this filled up with common soil, and the trees planted in it, they would probably have done well, and when established pushed their roots into the gravel and derived a certain portion of nourishment from it.

It must not be supposed that I have merely pictured imaginary possibilities; for I have seen instances of what I have described, and have known gentlemen purchase valuable shrubs and trees to plant on their lawns; but, as a rule, the practice has been to lay the turf close up the stems after planting. Two-thirds of those which I have known treated in this way have either died or barely existed, and this I can ascribe to no more likely cause than replacing the turf over the roots. I have frequently taken off the turf round coniferous and other trees, removed some of the soil, and have noticed that in almost every instance, except after continued rains, the ground has been hard, dry, and seemingly impervious to any amount of rain. It is evident that such are not the conditions in which a tree could be expected to grow and flourish; it is worth while, therefore, to take a lesson from the fact, and in planting trees, especially those which are valuable, to leave the surface of the soil bare for a certain space round the stems when they are planted on lawns. Let a neat circle be cut in the turf, and the appearance will be quite as good as if the turf had been laid close to the stems. This will go far towards insuring the safety of the trees both by permitting rain and artificial waterings to sink down, and saving the trees from the drying and exhausting influence of the grass, which takes up the moisture for its own support.

There are other circumstances in connection with planting trees and shrubs which it would be worth while to notice, for it is astonishing how little attention is given to the subject by a large number of gardeners, young ones in particular, who apparently consider it a matter scarcely deserving more than a passing thought. Numbers of trees are thrust into the soil with torn or bruised roots; others are buried much deeper than they ought to be; many have the soil thrown in solid lumps on the roots, this being often trampled and trodden until it becomes as hard and solid as it is possible to make it, as though planting a tree were an operation differing in no respect from setting up a post or scaffold pole. Then, again, fresh-planted trees are left all the winter to sway and twist about with the force of the wind, which alone would prevent the roots taking hold of the soil. These and other shortcomings are not at all uncommon, and appear to result from a thoughtlessness that in effect is as culpable as wilful carelessness or neglect. The old axiom, that "what is worth doing at all, is worth doing well," applies in all its force to planting trees; for it is by no means pleasing to the owner nor creditable to the operator when, after planting a number of trees or shrubs, a large per-centage of them die, leaving ugly gaps, which must be, and are, eyesores to all who behold them. The neglect of such precautions as are necessary to insure success cannot be excused on the score of taking up too much time; for to plant a tree well, and as it should be, does not take a minute longer than to plant carelessly. There are, it is true, causes of trees dying which are not always under the control of the planter, and for which a certain allowance ought to be made; but, then, it is undeniable that careless planting is productive of more failures than any other cause that I am aware of, and this must be my apology for offering these remarks.

What I have said refers more particularly to that class of gardeners who have no under gardener or other assistance, and many of them perform such work as planting in a manner far from creditable to themselves or the vocation which they assume to represent. It is not too much to assert that nothing can be of more consequence, as a rule, than the success or failure of fresh-planted trees, since they are ever before the eye, and afford abundant food for criticism. The character of the planter is, consequently, involved, and it would be well for him to give his attention a little, or, rather, much, to the art of planting, and not be contented simply with relying upon the facts that a hole must be dug, the root of the tree placed in it, and the soil returned and trodden over. Any labourer knows that much, and can do as much; and if the gardener desires, as he should, to receive credit for a little more understanding, he must show it in the way he performs his work.—C. F.

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 13TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters in the chair; Mr. Paseoe, Mr. W. G. Smith, Mr. Michael, Professor Boulger, Professor A. Church, Professor Scott, and Rev. J. Henslow, Hon. See.

Potato Reversion.—Mr. Smith mentioned that eighteen years ago Mr. Fenn crossed two long sorts of kidney Potatoes—viz., the Early Coldstream and the Early Ashleaf, the result being tubers of a globular form, which he called W. G. Smith. After eighteen years, during which this had come true, one plant suddenly reverted to the original type, being 5½ inches long, the round tuber being only about 2½ inches in diameter.

Ivy Blossoms Malformed. — Dr. Masters exhibited specimens and drawings of a very unusual condition of Ivy, in which the "dise" on the summit of the ovary had become hypertrophied into a thick ring, the style occupying the depression in the centre, the border of the ring supported about ten anthers, all being supernumerary, as the normal number was present at the outside of the base of the ring. The specimens were sent by Mr. Archer Briggs.

Oak Timber Defective.—Dr. Masters exhibited specimens of Oak wood, which was used for spokes of wheels, which was found to break off short. It was referred to Professor Marshall Ward for examination and report.

Pinus Lambertiana.—Dr. Masters exhibited a branch of this species, received from Mr. C. Herrin of Dropmore, Maidenhead, with two cones about 1 foot long. The size when growing naturally in California is said to be double that of the present specimen.

Cleistogamous Lawn Plants.—Mr. Henslow showed specimens of several species of plants which are propagated by cleistogamous flower buds. By that means, while retaining a dwarf habit, they are able to multiply very rapidly, and to extend over considerable areas in a tennis lawn. Although none of them are perennials, they remain so reduced in size that they are not exterminated by the mowing machine periodically cutting them down. The result is that each species has more or less completely covered certain patches of ground to the almost entire exclusion of everything else. The plants in question are Cerastium glomeratum, Montia fontana, Trifolium procumbens, Sagina procumbens, Alchemilla arvensis, Veronica arvensis, and Poa annua. Mr. Henslow added that he had observed many years ago a Trifolium flourishing in the same way on the close-cut grass in Kew Gardens, on the site of the present rockery.

Rumex crispus gynomonœcious.—Mr. Henslow exhibited specimens of this plant, which bears hermaphrodite flowers on longer, with female flowers on shorter pedicels, thereby forming whorls along the main peduncle. It does not appear to have been described in any work as being in this condition.

Cotyledon umbilicus, abnormal.—Mr. Henslow exhibited a specimen and leaves of this plant, found growing in a wall at St. Ives, Cornwall, the peculiarity being that it bore a flat, expanded, rosulate arrangement of leaves exactly like the House Leek, Echeveria, or several sorts of Saxifrage. The leaves were spathulate and not peltate at all. Some few growing freely were funnel-shaped.

Raspberry and Blackberry Hybrid.—Mr. Henslow drew attention to the foliage of a supposed hybrid received from Mr. Viecars Collyer of Leicester. The plant blossomed, but bore no fruit this season. The flowers were exactly like that of the Raspberry, as well as the tomentose under surface of the leaves; but the method of forming the quinate leaf out of the ternate agreed with that of the Blackberry as follows:—The simplest form of leaf is a single oval leaflet near the flowers. This becomes lobed at the base, and so two leaflets are given off, forming the ternate leaf. From the basal pair in the case of the Blackberry two more are given off, and thus form a quinate leaf, the lower four leaflets being nearly "palmate." In the Raspberry, however, the second pair of leaflets are given off from the terminal leaflet, just as were the primary pair. Consequently the five leaflets now form a more decidedly pinnate leaf. In the hybrid in question, although in all other features it agrees with the Raspberry, yet in this one in particular it resembles the Blackberry. As no fruit was produced a comparison could not be made with them.



ROSE HOUSES.

YOUR correspondent, "S. S.," recently called attention to an article in which I said, "If the house was constructed specially for the production of blooms for market it would be much lower;" that is, lower than 8 or 9 feet from the floor to the ridge. I intended to have written 9 or 10 feet, but that does not matter materially. I noticed the slight error I had made after the figures appeared, but did not think it necessary to make any correction. I think it will have been understood that I do not advise an arched trellis on which to train the plants when the flowers are grown entirely for market purposes. My reasons for this are several, but the main one only need be mentioned. I advised the bush method of culture, and for the simple reason that I am of opinion that finer flowers are produced than when the plants are trained on a trellis. The difference between the two is quantity on the one principle and quality by the other, although the system of pruning will influence this matter in no small degree.

I must, however, return to the question submitted by your correspondent. I do not know if "S. S." will accept a foot lower from the lowest figure given as "much lower" or not. This is a matter, however, in which the cultivator must be guided to a very large extent indeed by the ground on which he proposes to build, or more particularly by the natural soil. If the soil rested on a subsoil that would insure perfect drainage, such as sandstone, gravel, or anything of a similar nature, and the soil was of a suitable nature in which to grow Roses, or could be rendered so without much trouble, I should build the house 7 feet high from the doorstep to the ridge (inside). I should try to arrange the doorstep to be about 2 inches above the ground level—not more if I could help it; in fact the step, of whatever it might be composed, would be arranged on the footing of the outer walls. The best way of arriving at this matter is to suppose I was building a house for Niphetos blooms for market. It would be 100 feet long (or as near that as I could make it) to work in squares of a certain size—namely 18 inches by 1 foot, the former being the distance the rafters are apart. The width of the house would be 18 feet, the side walls would be 2 feet 6 inches high, the glass 1 foot 6 inches, making the house 4 foot high at the eaves. Your correspondent will say surely this is a flat house, and so it is, but I am not called upon to discuss reasons for advocating a flat-roofed structure in preference to one with a sharp pitch, such as are built nowadays. Some day I may have something to say on this matter.

I have given the height, length, and width of the structure; it is now necessary to divide it. The side beds would be 2 feet 6 inches each, the paths the same size, and the centre bed 8 feet. That would take up the whole space calculating the house to be 18 feet inside measurement. Your correspondent may ask, Am I to stoop when going round this house to do the necessary work and gather the blooms, &c.? Well, that depends upon the height of your correspondent; it would nearly accommodate me without a hat, but instead of being 5 feet 4 inches from the centre of the walk to the glass or thereabouts, I propose making it a foot higher by lowering the walks that depth. The house would then afford room enough for all ordinary men. I have a double object in this—First, one of economy, because I could dig out the walks

at a less cost than I could build the structure 1 foot higher ; and secondly, if the soil was of a suitable nature for Roses it would be placed in the central and side beds. This would prove a saving of labour, and require considerably less soil to make up the beds. The internal walls for the central and side beds would not be 2 feet 6 inches, the same as the outer ones ; they would not exceed 18 inches, which would allow head room for the plants. If I was compelled to have the walks of the house practically on the ground level, or a very few inches below it, I should have the structure 8 feet high. Houses of the nature I am advising would not do well for private places where ladies might wish to go round them, but in growing specially for the market I should construct them on the principle that no one required to go through the houses but myself. I may add that the side glass would simply consist of squares of glass placed edge to edge, resting on the wall plate and supported against the eave. To keep them in position a small strip of wood would be secured to the wall plate, and the same on the under side of the wood to which the rafters are secured, as well as on the uprights from the wall plate to the eave, the squares being pressed against a little putty and tacked into position ; no side ventilation would thus be provided according to the orthodox method, but the squares could readily be removed if deemed necessary.—Wm. Bardney.

CLOVELLY COURT, BIDEFORD.

A description of Clovelly Court would be incomplete without a reference being made to the picturesque village from which it takes its name. Leaving Ilfracombe at ten o'clock in the morning by the well-fitted Velindra steamer, the visitor, passing Lundy Island half-way on the right hand side, will find himself two hours later within 200 yards of the rough boulder-constructed pier of Clovelly, whither he and his companions are rowed in boats of the sturdy fishermen. The view of Clovelly from the sea, with its string of irregular white and partly lichen-covered cottages ensconced on either side of the gigantic stair-case-like street, with wooded slopes on each side, is strikingly beautiful. From the pier, which is reached at low water by means of perpendicular ladders, to that point at the top where the principal street, which is almost precipitous in some parts, joins with the high road, there is not 60 yards of level ground. The only piece of level is a kind of landing in the street-staircase, one-third of the way up, commanding a view of the harbour, with its red sailed fishing boats. Pretty cottages line the street, here two or three together, there standing apart, almost all with well-cared-for gardens, and at one point the village seems to end abruptly, till the visitor discovers that the road is carried through a tower-like house.

Clovelly Court, the North Devon residence of Miss Hamlyn Fane, is high among tufted trees, half a mile west of the village. It is a handsome mansion, erected in 1780. Close by stands the church, in which the late Canon Kingsley ministered for so many years to the spiritual requirements of the Clovellian population. The grounds are open to visitors by favour of the owners. They are extensive, of great beauty, and a variety of pleasing views present themselves at every turn in the winding paths, which, passing by lichen-covered rocks, and through leafy glens and ferny combes, suddenly opens upon the sea. The zigzag drive through the "Hobby" wood, though of great beauty, is, nevertheless, calculated to inspire the stoutest heart with a wholesome fear in ascending and descending, as it were, on the very edge of the precipitous rocky slopes some 400 feet above the sea. It skirts the cliff line for three miles, thereby affording grand glimpses of the sea on the one hand, and on the other of the woods, streams, and glens for which North Devon is celebrated. "Gallantry Bower" is the name given to a steep and lofty cliff overlooking a glorious panorama of sea on the one side and richly wooded country on the other. It is 360 feet above the sea, and less than one mile westward of the Court. A short distance from Gallantry Bower is Mouth Mill. It is a pretty combe, where two streams unite, opening to the sea. The view westward to Hartland Point is very striking. Eastward it stretches over Bideford Bay to Baggy Point. A couple of hundred yards to the right from the top of the village and on high ground to the left of the entrance gate to Clovelly grounds, stands the lighthouse. The Park, opposite the north-west front of the Court, consists of table land, the soil being a deep loam resting on a stratum of clay. It was once famous for its hawks. "A Clovelly hawk against all the world."

Nearly all trees do well in the park and grounds at Clovelly, except at a few points where they are exposed to the Atlantic breeze, notably all Conifers. In the West Wood there are several fine specimens of the Silver Fir nearly 100 feet high, and ranging in girth from 11 feet to 15 feet. Spanish Chestnuts having a circumference of stem of 10 feet at 3 feet from the ground, while two specimens of the common Horse Chestnut measure 16 feet 8 inches and 19 feet 3 inches respectively round the trunk at the same distance from the ground. The Hobby Wood contains fine examples of Beech, Oak, Chestnuts, &c. The timber in the hollow being out of the reach of the Atlantic spray is especially good, and the declivity from the drive alluded to above down to the beach is wood throughout. Flowering shrubs, especially Rhododendrons (which form a cover in the Wilderness), Escallonia macrantha, and Hydrangeas do remarkably well here. It is a notable fact that in a rather exposed part of the park north-west of the Court and extending to the terraced grounds southward of it there are several remarkable flat-headed bushes of Thorn of unduly large horizontal dimensions, remarkable by reason of the uniform flatness and height of head of all the bushes within the line of the Atlantic breeze, thereby giving one the idea that a huge switching-hook had been passed with gigantic force simultaneously over their heads every spring and autumn. To this fact, the persistent restriction of top growth to a certain line, is to be attributed the unusually large spread of branches of the individual bushes, underneath and between which are to be seen a good number of the mottled deer scampering about, keeping time, as it were, to the music of the birds in the trees overhead.

All the glass houses, with the exception of the elegant conservatory adjoining the east end of the mansion and communicating with the interior and facing due south, are situate against south walls in the kitchen garden. They consist of three vineries, two Peach houses, one orchard house, one greenhouse, and one stove. Vines of Black Hamburgh, Golden Hamburgh, Muscat of Alexandria, Grizzly Frontignan, Alicante, and Venn's Black Muscat were all carrying heavy crops of medium-sized bunches of Grapes, which at the time of my visit gave promise of finishing well. Mr. David Atkins, the head gardener, finds Venn's Black Muscat Grape to set as freely as a Black Hamburgh does in a greenhouse temperature, and to colour as well as could be desired, thereby showing it to be a low-temperature Grape—that is, that it succeeds best in a cool dry atmospheric temperature while in flower and colouring. On the back wall of the late vinery there was a fine display of such excellent Roses as Niphetos, Bouquet d'Or, and Gloire de Dijon. Trees of Noblesse and Royal George Peaches, and Pine Apple, Pitmaston Orange, and Rivers' Orange Nectarines were in good condition and swelling good crops of clean healthy-looking fruit. I noticed that Mr. Atkins allows, as everybody ought to do, a good distance between the shoots of his Peach and Nectarine trees in training ; from 4 to 6 inches is none too much, allowing for one shoot of the current year's growth being laid in between. There is no greater mistake in fruit culture, whether it be indoors or out, than crowding the branches and shoots proceeding therefrom.

In the stove I noticed good specimens of Asparagus plumosus nanus, Allamanda Hendersoni, in fine flower trained over back wall, against which are also trained flourishing plants of Euphorbia jacquiniæflora, growing in narrow border, Euphorbia splendens, Clerodendrons Balfouri-anum and Thomsoni, Hibiscuses (double and single flowered varieties), Crotons, &c. The greenhouse was gay with a variety of well-flowered plants usually met with in such structures at that time of the year. The conservatory alluded to above was remarkably bright with well-flowered plants of Pelargoniums, tuberous-rooted Begonias (double and single), among which were many promising seedlings, the flowers being large, well formed, and of pleasing if not new and distinct shades of colour ; Fuchsias, including a grandly flowered plant of Clapton Hero, trained round a pillar 20 feet high in the centre of house. This is a good dark free flowering old variety, after the habit of the Old Carolina. Abutilon Boule de Neige, similarly trained, made a nice contrast. Tree and other Ferns judiciously intermixed with the flowering plants had a very good effect. A plant of Dicksonia squarrosa, having a stem 4 feet high and nearly a foot in diameter, supporting a good head of fine healthy fronds, gave a finishing touch to the central arrangement of the house, as also did some four or five dozen pots of the Gladiolus. The Bride, in grand flower, stood on the tessellated floor at the base of the front side stage, gave finish to an arrangement in that side of this beautiful house, which did Mr. Atkins credit.

A view of great extent and beauty is obtained from the conservatory terrace. Croyde, Morte Point, Baggy Point, and Braunton in the north-east, eastward thence is Westward Ho, and should the atmosphere be clear, Port Eynon, the nearest point in Wales ; the opposite side of Bay of Bristol Channel may be seen thirty miles off, and half that distance in a north-westerly direction is Lundy Island, a place covering an area of 2000 acres of land, and almost encircled by iron-bound inaccessible cliffs, and interesting to geologists as affording "sections at the junction of the granite and slate." Out of doors hard by the conservatory I noticed a grandly flowered bush, 10 feet through of a pink-flowered Veronica, and in another part of the gardens a Clematis Flammula completely covered a house and tree close by, with its white sweetly scented flowers. Three hundred plants of Chrysanthemums, including the best varieties, are grown for the winter embellishment of the conservatory, &c. The kitchen garden is two acres in extent, the soil being a deep loam of good quality. It was well and judiciously cropped with vegetables of the most approved kinds and varieties. In conclusion, I may say that the general keep of the gardens and grounds attached to Clovelly Court reflect credit on Mr. Atkins, who has presided over them during the past twelve years, and that Bideford, eleven miles off, is the nearest railway station to Clovelly, Ilfracombe being twenty miles by road in a north-easterly direction.—H. W. Ward.

FORCING LILY OF THE VALLEY.

Your correspondent "M. M." seems to find forcing Lily of the Valley during the early winter months a decided failure, and some by reading his communication on page 418 may be deterred from attempting to have this much-valued flower as early as Christmas or the new year. In my opinion the difficulties are not nearly so great as "M. M." asserts. We find it comparatively easy in a house devoted to Melon growing during the season to have them in flower at Christmas, and even sooner. The crowns we obtain are English grown. They are procured as soon as practicable, and after being potted or boxed they are placed out of doors until required

to be taken indoors ; they are then placed in an intermediate temperature, prior to being arranged in the forcing house, which, as I have stated, is a Melon house, and having bottom heat pipes for the beds. On the boards over the pipes we place narrow frames, which are nearly filled with cocoa-nut fibre, in which the pots are plunged up to the rim. Some loose moss is then shaken over the crowns, so that they are completely covered, and which is allowed to remain on them until the growths and flower spikes have pushed up through it. The frame is kept closed to this time, and the moss moist, when air is given and gradually increased until they are ready for being taken out of the frame, when they are placed on shelves well up to the light and slightly sprinkled with the syringe two or three times a day, which assists the development of foliage and flower spikes.

Our first plants last year were placed in heat on November 23rd, and there were some in flower on December 14th, and a few days before Christmas we had the whole finely flowered, many of the spikes having from ten to fourteen flowers of good size. We place about twelve or fourteen crowns in a 48-size pot, and the majority of them flower in the manner described. I think anyone having a house such as is used for Cucumber or Melon growing with bottom heat pipes may, if they procure good plump crowns, be able to have them in flower at the end of December or at the new year if they are treated in the way I have mentioned. Anyone not having suitable frames would find large boxes covered with glass quite as useful.—S. T. C.

HARDY PLANTS FOR CUTTING.

Will you kindly assist me with your advice as to what would be the best herbaceous plants for me to obtain now? I want those that would yield plenty of flowers for cutting purposes. They are used here largely for house decoration, and we require flowers with long stems, such as Michaelmas Daisies, Gladioli, and Delphiniums, Phloxes, or such like ; the brighter and more striking the colours the better. I should be much obliged if you would name annuals for spring sowing of the same description. I have grown many different sorts, mostly shorter kinds. I want to make my list up of some more suitable for the purposes mentioned.—W. B., *Sussex.*

[The following are all good cutting plants and the colours safe to please most people. White flowers are always most sought after, and of these any, or the whole of the following, are suitable.

White Flowers.—Achillea Ptarmica fl.-pl., Allium neapolitanum, Anemone Honorine Jobert, Galtonia candicans, Eupatorium fragrans, Campanula persicifolia alba fl.-pl., C. urticæfolia alba fl.-pl., Chrysanthemum Leucanthemum, C. maximum, C. serotinum, C. Madame Desgranges, C. Mrs. Cullingford, C. La Vierge, Hesperis matronalis alba plena, tall variety ; Iris florentina, I. germanica alba, Lilium candidum, L. longiflorum, L. speciosum album, Lychnis vespertina fl.-pl., Malva moschata alba, Narcissus incomparabilis, N. poeticus ornatus, poeticus, and p. fl.-pl., best variety ; Phloxes Lady Napier, Miss Robertson, and Bridesmaid, Spiræa Aruncus, S. Ulmaria fl.-pl., Gladiolus Shakespeare and The Bride, Dahlias White Aster, Mr. Tait, and Henry Partick, Carnations White Clove, Gloire de Nancy, Comtesse de Paris, Comte de Chambord, The Bride, Virgo, &c. ; Pinks Mrs. Sinkins, Mrs. Welsh, white Foxgloves, Convallaria polygonatum.

Yellow Flowers.—Achillea ægyptiaca, Adonis vernalis, Alstrœmeria aurantiaca, Coreopsis lanceolata, Chrysanthemums Précocité, Golden Fleece, George Wermig, and Mrs. Burrell, Doronicum austriacum, D. Pardalianches, Tulipa sylvestris, Gaillardia vars., Harpalium rigidum, Helenium pumilum, Helianthus multiflorus fl.-pl., Hemerocallis flava, Iris Pseudacorus, Narcissus in great variety, Lilium excelsum, L. croceum, Papaver nudicaule, Solidago canadensis and Shorti ; Trollius asiaticus, yellow Dutch Tulips, Dahlias Mrs. Stancombe, Canary, and Mrs. Hawkins, Carnations Pride of Penshurst, R. H. Elliot, Mrs. Reynolds Hole, &c., Gladiolus Alsace, Lafayette, and Pactole.

Those with red shades are Carnations in variety, Gladiolus brenchleyensis, Grand Rouge, Le Phare, Legouve, Flamboyant, Horace Vernet, Arabi Pasha, Montaigne, and Meyerbeer, Phlox coccinea, Dahlias Juarezi, Comet, Chilwell Beauty, Glare of the Garden, Lilium tigrinum splendens, L. fl.-pl. umbellatum, Thunbergianum, Tritoma Uvaria, Papaver bracteatum, Schizostylis coccinea, various Tulips, Lychnis chalcedonica fl.-pl., Chrysanthemum Toreador, Roi des Précoces, and Salvia fulgens.

Of blue flowers, which are not numerous, we have Delphiniums, easily raised from seed, Agapanthus umbellatus, Salvia patens, Erigeron speciosum, Stenactis speciosa, Polemonium Richardsoni, Scabiosa caucasica, Eryngium amethystinum, and Geranium pratense fl.-pl.

Flowers of rose and pink shades are Anemone japonica, Achillea rosea, Dielytra spectabilis, Phlox Madame Mossent, M. Grahame, Carnation Mary Morris, Princess Mathilde, Féodora Miss Joliffe, and perhaps the pink Malmaison ; Gladiolus Eugène Souchet, Fra Diavolo, Teresita, Orphée, Phœnix. Other necessary flowers are Asters, such as turbinellus, elegans, Novæ Angliæ, Novi Belgii, Amellus bessarabicus, versicolor, ericoides All the Pyrethrums are suitable ; Gladiolus Lemoinei and André Chenier are very fine ; also G. Penelope Amitié, M. Ad. Brongniart, Psyche, Hesperide, Diamant, Ne Plus Ultra, and Gandavensis should be grown. Monarda didyma, Convallaria Polygonatum, Foxgloves, Polygonum Sachalinense, Iris ruthenica for foliage, Spanish Iris, also German Iris, any herbaceous Pæonies, and Thalictrum minus.

Good tall-growing annuals and biennials are white and purple Sweet Sultan, Scabious, Salpiglossis, Branching Larkspur, Cornflower, Corn Marigold, Œnothera Lamarckiana, Quilled Asters, white Pæony Aster, Veitch's Miniature Sunflower, single Zinnias, Nicotiana affinis, single African Marigolds, Humea elegans, Gaillardias, Sweet Williams, Canterbury Bells, and Poppies in great variety.]



CHRYSANTHEMUM PRINCESS OF WALES.

I agree with Mr. Molyneux's remarks, page 149, respecting the above variety, and I consider no stand of incurved blooms complete without it and Mrs. Heale. The beautiful form of these varieties when well grown claims a place in the middle row of any stand, and now we have Violet Tomlin, a purple rose-coloured sport from Princess of Wales, which (with the exception of Refulgens) I consider the brightest coloured of all the incurved. It requires the same good treatment as its parent. I hear, too, we are to have another one added to the family, a yellow sport from Mrs. Heale.

CHRYSANTHEMUM CONFERENCE.

I was much pleased to read the account of the Conference held at Sheffield on November 16th and 17th, and, like many other lovers of the "Autumn Queen," would like to have been present ; but that in my case was impossible. I would now suggest that another Conference be held in the afternoon on the date of the National Chrysanthemum Society's annual dinner, if it could be so arranged, as then it would give members from a distance an opportunity of attending both the Conference and dinner. No paper is required in my opinion, but a further discussion on those read at Sheffield by Mr. Tunnington and Mr. Molyneux.—J. Doughty, *Angley Park Gardens, Cranbrook.*

THE SEASON.

Now that the Chrysanthemum season is so far advanced it might be interesting to compare a few notes as to the success or failure we have met with this season. As far as my own observations are concerned, I have to report almost a complete failure, which has been brought about by damping, and which by report appears to be very general this season throughout the country. Those that appear to have suffered most are the large blooms, or more properly speaking, those that have been grown on the single-stem system for exhibition. But those that have been grown simply for decoration and cutting have escaped with very little loss. This damping I have no doubt has caused much anxiety, especially to those whose plants have been so full of promise, and the cause seems wrapped in mystery. As far as my own experience is concerned and the observations I have taken, I feel convinced that it is through the injudicious supply of water and over-feeding, especially after the buds have been taken, for it should be remembered that when the buds are swelling the plants do not require so much water as when they are in full growth, and I think if we were more careful in examining each plant and attending to its wants individually instead of pouring water and stimulants into it wholesale, it would be time well spent, and we should hear less of failures through damping. Of course the seasons must be taken into account, and there are times when damping is comparatively unknown to us, but the present season has been an exception. The growth of the plants has been everything that could possibly be desired, but with so little sunshine it has been next to impossible for them to ripen their wood thoroughly. Consequently the wood and foliage has been full of sap. Therefore, although the buds were at first so full of promise and held forth great expectations, the result is anything but satisfactory, and I would strongly advise all to be more careful in the supply of water and stimulants at the stage before mentioned. But some may say, "You cannot give Chrysanthemums too much" (and I have had it said to me too) ; but even if this should be the case in regard to plants growing naturally, I would draw attention to the fact that when plants are only carrying three or four blooms they cannot stand so much feeding, as there is not so much for the roots to support, and the grave consequence is the roots are surely poisoned, and when the time comes that we expect to see good returns for our labour, we see (and in some instances when only one or two florets have expanded) they begin to decay. Then we

are heard to exclaim, "What can be the cause? we cannot make it out," &c., and instead of it being a pleasure to look round them time after time, the sight of them becomes sickening, and through, I would conclude, the injudicious watering and overfeeding.—R. PAGE, *Stroud, Gloucester.*

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the Floral Committee was held on Wednesday, the 21st inst., Mr. Sanderson in the chair. There were also present Messrs. R. Ballantine, Wm. Holmes, Geo. Stevens, Geo. S. Addison, W. Boyce, H. Cannell, C. Gibson, &c. A fair number of new Chrysanthemums were staged by Messrs. Cannell & Sons, Swanley, including Madame Baco, M. Tweedie, Yellow Lane, a bright yellow single, and others. A vote of thanks was awarded to Mr. Elliott of Jersey for a box of Jersey seedlings. Two very fine blooms of Mrs. F. Thompson were exhibited. This is an American variety which has proved to be synonymous with W. & G. Drover. The following first-class certificates were awarded :—

Miss M. A. Haggas (Messrs. Davis & Jones of Lilford Road, Camberwell.—A deep primrose yellow incurved sport from Mrs. Heale, of good substance and resembling the parent plant in every respect except colour.

Mrs. C. H. Wheeler (Mr. Thomas Butterworth, Benton Grange, Cheshunt).—A very large Japanese flower of a golden colour suffused with red and bronze similar to Edwin Molyneux, but having much broader florets.

L'Automne (Mr. Geo. S. Addison, Parchmore Road, Thornton Heath).—A soft salmon buff incurved flower with broad petals, and being of considerable depth and solidity is without doubt an acquisition to the incurved section.

Alcyon (Messrs. H. Cannell & Sons, Swanley).—A Japanese reflexed, broad, drooping florets, rose carmine, silver reverse, a deep flower of good substance.

EARLY CHRYSANTHEMUMS.

I HEARD it said a season or two ago of the early flowering sorts, because some were not quite so prominent as before, "Ah, they are going back!" But it is not so, as this season has shown quite as much advance as can be expected, and more in some directions. The French raisers have certainly not done much with the early varieties, and if they send over such poor productions as they have this season they will soon be surpassed by the Americans, who can raise their own seed, and there are many amateur growers who are likely to obtain at least a few good sorts. I think I am justified in coming to this conclusion from the fact that two great steps in advance—viz., Grace Attick and Sam Henshaw, are both of American origin. Another distinct sign of progress is the marked advance in securing the seed of early sorts here in England. It is true the seedlings are only Pompons at present, but others I expect will be grown and seeded in due time.

As regards the shows of the early sorts of this season, we have had this difference, that no exhibitor at either one showed at the other. At the Crystal Palace Messrs. Davis & Jones were first with a fine group of well mixed varieties, showing besides, but not for competition, a very fine group of Madame Desgrange. I think it was the finest ever seen at a public show. I took the second prize for the group among which I had one poor plant of Grace Attick, the first plant, as far as I know, ever exhibited in England, and poor as it was, for it was overblown, it attracted more attention than any other. It is not much to my taste, but most people who have seen it seem to admire it; perhaps that is because it is such a very new type among the early sorts. Mr. Miles, of the Dyke Road, Brighton, took the third prize for a group of Mrs. Burrell and a few of other sorts to comply with the schedule.

At the show of the early varieties at the Aquarium by the National Society the most prominent exhibits were the tables of cut flowers, and their long expanse looked very beautiful. They were nearly all grown naturally without disbudding, but there was one thing that struck me in some of the exhibits—viz., that there were several sorts that ought not to find a place in a nursery or garden, for it is a waste of space and labour to grow the poor old sorts of a few years back. In this class Mr. Ware, of the Hale Farm Nurseries, Tottenham, was first with a fine representative collection, and Mr. Owen of Maidenhead second. Mr. Witty of Highgate Cemetery has first prize for a group without competition. The only new variety of any note at this Show was a fine group of what I should call a dark strain of the yellow variety of Madame Desgrange, named Mrs. Hawkins, exhibited by Messrs. Hawkins & Bennett, Twickenham. This was awarded a first class certificate, but I expect it will not turn out darker than other strains.

This season with its sharp frost at the very beginning of October has tested the merits of Alice Butcher, the red sport of Lyon, which proves to be one of the best for resisting frost when the flowers are expanded enough to show their colour. Lord Mayor, too, seems likely to be distinguished in this respect; 6° of frost did not spoil the flowers of Alice Butcher, which will, of course, increase its value as a variety for market and other purposes.

I regard the most prominent find of the season from a decorative point of view to be Sam Henshaw. It has been here, it seems, for a season or two, but like other American sorts attracted little attention because so many are almost worthless. It is said to be a seedling from Comte de Germiny and Viceroy of Egypt raised by Dr. Walcot of New York. It is a wonderfully strong plant, and grows about 4 feet high, having flowers 5 inches across. It begins to flower, at least did this late season, about the middle of October. The colour of the petals is a bright pale magenta inside, with a bright grey rather pink reverse. They are broad and long, incurving so much as to close over any eye there may be in the flowers. It does not altogether please the critics, but is admired by the general public, and is certainly a marked addition to the October varieties; besides, I think, in good seasons it will give ripe and fertile seed in England.

Grace Attick is another American sent over a season or two back. It is said to have been raised by Mr. John Thorpe. It is quite a new departure, very dwarf, 2 feet high, Japanese, white in colour, with blooms from 4 to 5 inches across, the petals being of a long thin pipe-like structure. The habit is bushy with very spare foliage. It begins to flower at the end of July, but is of long-continued flowering habit, in fact its vitality seems largely centered in the production of flowers. I expect it to take a prominent place as an English seed parent. Its only defect seems a weak constitution, but this may be improved.

O. J. Quintus is a good variety from a semi-early decorative point of view. It is a robust and vigorous plant, growing 4½ feet high, with blooms 3 to 3½ inches across; Japanese in form, and a fine pink mauve in colour, well fit for after dark decoration. It is profuse when left to flower naturally. The petals stand straight out, which seems to enable it to stand wind and rain very well. It is of French origin.

M. Van Hulle is of continental origin, another fine robust useful plant, growing 3 feet high, with blooms 2½ inches across, very full of petals standing straight out; they are red flaked with yellow, borne on the plant in a way well suited for cutting purposes, as they come out altogether. This Pompon is well fitted for a small pot decorative plant, blooms in September and October, and comes into competition with Alice Butcher, but is stronger and better able to support itself than that. It requires little or no sticking.

Elsie is a good reflexed white October bloomer, ivory white, a robust plant, 4 to 5 feet high, flowers 3 inches across.

M. Délaux sent over seven sorts which were said to be early, but only one of them flowered before the end of October, that was Madame C. Souchet. It is a Japanese, 5 feet high, not bushy; the flowers are a deep magenta, 4 inches across, not unlike M. Chrêtien; the other six were by no means in bloom by the end of October.

We have been particularly fortunate this season with our seedlings from seed grown here. I grew eighty-eight, and Mr. Ware of Tottenham about 200; he has two distinctly good and early, and five or six more fit to try again; they often come better the second season. I have one good one of last season and five of this, besides three or four to try again. Miss P. Broughton, English seedling from seed grown here the season before last, extremely white and elegant Pompon, flowers 2 to 2½ inches across, very stout bushy habit, 2 feet high, requires no sticks, a profuse bloomer, differing from all others. Flowers in September and October. Very useful for small cut flowers, and it makes a good small pot plant.

Clara White, Pompon, seed and plant grown here, dwarf, 2 feet high, flowers 2 inches across, borne on long stalks fit for cutting, stiff habit, does without sticks.

White Lady, seed and plant raised here from Salter's Early Blush. Good white Pompon, slightly tinged with blush, grows 2 feet high, flowers 2 inches across. Flowers in September.

Jacintha is an excellent Pompon raised here from seed of Salter's Early Blush, on which it is an improvement, being deeper in colour—a bright pinkish lilac to white, and fuller flower 2½ inches across. Plant 28 inches high, with a rather stouter stem than Salter's Blush. Flowers in September.

Goldsmith, seed and plant raised here. A deep bright yellow Pompon 27 inches high, stout enough to do without sticks. Reflexed flowers 2½ inches across, which come out in September.

Dodo, seed and plant raised here. A pretty little yellow Pompon, very stout and dwarf. A profuse bloomer, 18 to 20 inches high. Flowers 1½ inches across. Flowers in September. Requires no sticks. Good small pot plant. The last five of these are very likely to come earlier next season, as the seed was not sown till March 1st.

Besides the above I have received from the United States quite a number of varieties said to be early, but as many of them came over late in the season and in very bad condition from the voyage, they were not in bloom at the end of October, and can only be tested another season. But I have great hopes of something good, as there are so many raisers. Mr. John Thorpe, in "The American Garden" of October, says: "There are not less than ten thousand seedlings to flower for the first time in the hands of those on the look out for improvements. There are new forms, new colours, better growers, earlier and later flowering varieties." In regard to America, I must thank all friends there, especially Mr. E. H. Libby, of 751, Broadway, and Mr. T. H. Spaulding, who proposes to grow and distribute these early sorts in the United States. I have also this season especially to thank Messrs. Laing for their kind and efficient assistance, not forgetting the English horticultural press.—W. PIERCY, 89, *West Road, Forest Hill, London, S.E.*

RHODODENDRON FORTUNEI.

THIS Rhododendron has been known for some years in English gardens, but it cannot be said to be either common or frequent, as, except in a few collections where Rhododendrons are specially prized, it is rarely seen. In the Warren Wood Gardens, Hatfield, Herts, the shrub succeeds satisfactorily, as may be judged from the specimen shown in our illustration (fig. 55, page 495) prepared from a photograph obligingly forwarded to us by the gardener, Mr. G. Aslett. In June of this year we called attention to the variety of R. Fortunei raised at Warren Wood

named Mrs. C. Butler, which is distinguished by the soft pink hue of the wide expanded flowers, in large, loose clusters, and extremely powerful fragrance. It has been grown in the gardens named for several years, and has maintained its character so well for distinctness and free flowering habit that it attracted the attention of many interested in Rhododendrons, with the result that it passed into the hands of Messrs. Paul and Son, of Cheshunt, for distribution. It has been exhibited at the Royal Horticultural Society's meetings, but the flowers are so delicate in texture that they are rarely seen to advantage after being packed for travelling a distance.



EVENTS OF THE WEEK.—The National Chrysanthemum Society's Floral Committee will meet in the Royal Aquarium, Westminster, on Wednesday, December 5th. A General Committee meeting of the same Society will be held in Anderton's Hotel, at 7 P.M., on Monday, December 3rd.

—— THE annual meeting of the NATIONAL ROSE SOCIETY will be held at the rooms of the Horticultural Club, "Hotel Windsor," Victoria Street, Westminster, on Thursday, December 6th, for the purpose of receiving the Treasurer's accounts, electing officers for the ensuing year, making arrangements for 1889, and general business. The annual dinner will take place the same day at 6 P.M. at the same place. The chair will be taken by Dr. Robert Hogg, one of the Vice-Presidents of the Society, and a large attendance of members is expected.

—— LAST week an action came on for trial before Mr. Justice Denman, and a special jury, in which Mr. F. Sander, of St. Albans, sued the Duchess of Montrose for the amount of £1730 6s. 4d. for Orchids supplied and work done in the conservatory at Sefton Lodge, near Newmarket. Mr. Reid, Q.C., appeared for the plaintiff, and Mr. Philbrick, Q.C., for the defendant, and a number of witnesses were examined, the majority testifying to the fact that the charges were not excessive. The chief amount was for 1000 Orchids at 1 guinea each. In the result the jury returned a verdict for the plaintiff for the full amount claimed, with costs.

—— GARDENERS' ORPHAN FUND.—The floral concert promoted by the gardeners of Chesterfield and district in aid of the Gardeners' Orphan Charity, which was held at Chesterfield on Wednesday the 14th inst., proved a great success. It was patronised by all the nobility and gentry of the district, and attended by most of them, including some members of our Duke's family. To show the interest taken in the concert, I may say nearly a hundred people travelled from this district in different conveyances, a distance of over nine miles, including about forty garden men in the plant van. There were between 1000 and 1100 people present, and the takings are between £50 and £60. I may say for myself, and for the gardeners who helped me, that we were never engaged in a work which gave us so much pleasure. I hope this may be the beginning of some such efforts on the part of all gardeners throughout the kingdom, when the Gardeners' Orphan Fund would soon become one of the most prosperous charities in the kindom. Making a start is the biggest business: when once the "ice is broken" it is all plain sailing and help flows in on all sides.—OWEN THOMAS, *Chatsworth.*

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. E. R. Cutler informs us that at a meeting of the Committee held on Thursday the 15th inst. it was determined to hold the fiftieth annual general meeting of the subscribers at Simpson's, Strand, on Wednesday, 16th January next, and to add on that occasion fourteen pensioners to the list, five without election under Rule 6, and nine by election among the subscribers. The voting papers will be issued on or about the 15th December. The usual annual friendly dinner of the members will take place after the meeting, and the Very Rev. S. Reynolds Hole, Dean of Rochester, has kindly consented to preside. A special Committee has been appointed to consider the best manner of celebrating the year 1889, this being the fiftieth, or jubilee year, of the Institution.

—— TRADE EXHIBIT.—We are desired to note that at the recent Show of the National Chrysanthemum Society at the Royal Aquarium Messrs. Sutton & Sons, Reading, showed 130 varieties of Potatoes, and were awarded a silver-gilt medal, a special prize also being accorded for a similar exhibit at the Crystal Palace.

—— WE are informed that a special prize was granted to Mr. J. DIBBER of Dorchester for stands of forty-eight blooms of Chrysanthemums at the late Bournemouth Show. The blooms as the production of an amateur were decidedly meritorious, but arrived too late for exhibiting in the classes for competition.

—— THE Committee of the Sheffield and West Riding Chrysanthemum Society have sent a certificate of merit to MR. EDGAR NEWTON Hitchin, for the dry-glazed span-roofed Chrysanthemum house he exhibited at the recent Show. The house was provided with the new system of ventilation at the eaves, which, like that at the top, is worked by a simple and efficient crank movement.

—— WE learn that a special silver medal has been forwarded to MR. G. R. ALLIS, Old Warden, Biggleswade, for Grapes exhibited at the Sandy Show. The medal was provided by Messrs. Wood & Sons, whose manure had aided in their production of the fruit. We believe Mr. Allis has won the first prize at Sandy for eight consecutive years with Buckland Sweetwater Grapes.

—— GARDENING APPOINTMENTS.—Mr. R. Russell, for many years head gardener at Old Forge House, Dunmurry, Belfast, has been appointed head gardener to T. Montgomery, Esq., Ballydrain House, Belfast. Mr. Alfred Harris, late foreman at Abberley Hall, Stourport, has been appointed head gardener to Sir William Marling, Stanley Park, Gloucester. Mr. H. H. Tonkis has been appointed to succeed Mr. McNair at Ilam Hall Gardens, Ashbourne. Mr. John Dixon has been appointed gardener to H. V. Story, Esq., Ruddington Manor, Nottingham.

—— IN Messrs. Parker & Sons' nursery at Bristol MIGNONETTE IN POTS is well grown. The strain is a good one, and is being distributed under the name of Parker's New Mignonette, a distinction which it undoubtedly merits, being of sturdy and diffuse branching habit of growth surmounted by spikes of bloom remarkable for their length and stoutness; and also what is popularly looked upon as the chief charm of Mignonette, its delicious scent, is an especially good feature in this variety.—M. C.

—— THE first annual Chrysanthemum Exhibition of the BACUP FLORAL AND HORTICULTURAL SOCIETY was held at the Mechanics' Hall, Bacup, on Saturday, November 24th, and was opened at noon by the Mayor (Mr. Alderman Shepherd). Over £50 in prizes were offered, and the Show was well patronised and a great success. Mr. David Lord, Stacksteads, contributed a group of plants, not for competition, which included exceptionally fine plants of Crotons, Dracænas, Asparagus plumosus nanus, and Orchids, which were specially commended by the Judges. Mrs. Roundell, Gledstone Hall Gardens, Skipton, was highly successful in the open class.

—— PEA WILLIAMS' EMPEROR OF THE MARROWS.—This is by far the best late Pea that has yet come under my notice. In ordinary seasons it grows to a height of 6 feet, this year they exceed this by 2 feet. It is of a branching habit, an enormous cropper, the pods large and well filled, the flavour of the peas is all that can be desired. A long row of this variety was sown here on the 22nd of June last. We commenced to gather from them on September 29th, and to my great delight, with the exception of the first week in October we have got two good gatherings of Peas from this row each week up to November the 17th, the last gathering being made on the latter date. Green Peas in the middle of November is not, I believe, a common occurrence even in the salubrious climate of Ireland.—R. WELLER.

—— A CORRESPONDENT states that the annual Show of the HESSLE CHRYSANTHEMUM SOCIETY was held in the Assembly Rooms on the 16th inst., when there was a good display of cut blooms, groups, and bouquets, which were of great merit. In the open class for twenty-four cut blooms, twelve incurved and twelve Japanese, R. Soames, Esq. (Mr. J. Walker, gardener), Waltham Hall, Grimsby; A. Wilson, Esq. (Mr. J. Leadbetter, gardener), Tranley Croft, Hull; and Mr. Whittaker, Hessle, were the prizetakers. For twelve, six incurved and six Japanese, Mr. R. Soames was again to the fore with excellent blooms, and Mr. King, Ferribe, second. The amateur classes were well filled, and the exhibits of excellent quality. The groups were creditably arranged, but the exhibitors' collections had evidently suffered from the early frosts which prevailed in the district about October 1st and 2nd. The arrangements were admirable.

—— The second Show of the Bolton Chrysanthemum Society was held in the Town Hall, November 23rd and 24th, and, despite the unfavourable season, the Show was a very creditable one, the main features being the groups in the miscellaneous class. Thomas Wilkinson, Esq., (gardener, Mr. John Pountain) won first honours with a well-arranged collection. Mrs. Shaw (gardener, Mr. Charles Jones) was a good second; John Heywood (gardener, Mr. George Pawson) being third. In the class for groups of Chrysanthemums there were five entries, J. C Ormrod, Esq. (gardener, Mr. R. Smith) being first with a well arranged collection. Mrs. Knowles (gardener, Mr. Thomas Hand) was second with dwarf well grown plants, but packed together too closely. Of cut flowers the twelve incurved and twelve Japanese from Arthur Knowles Esq. (gardener, Mr. George Corbett) were decidedly the best, and were first in both classes. Good Grapes were also shown by Mrs. Cross (gardener, Mr. R. Herd).

—— The Wakefield Paxton Society.—At the usual weekly meeting of the members of this Society, held at the "Saw Hotel," Councillor Milnes, the President, occupied the chair, and Mr. Arthur Goldthorpe, one of the Vice-Presidents, the vice chair. There was a good attendance. Mr. West of Rotherham read an exceedingly interesting paper entitled "Insects Parasitical on Plants." Mr. West, who is a skilful gardener and a clever naturalist, pointed out in a very clear and intelligent manner those insects which are specially injurious to plants, dwelling more particularly on the caterpillars, moths, and butterflies, a collection of which he exhibited. A discussion followed the lecture, in which Messrs. A. Goldthorpe, G. Gill, W. Calvert, G. Parkin, T. Garnett, and others took part, and at the close a very hearty vote of thanks was awarded to the essayist on the motion of Mr. A. Goldthorpe, seconded by Mr. G. Gill. A pressing invitation was given to Mr. West to pay another visit to Wakefield, and he acceded to the invitation.

—— Torreya myristica.—In any collection of Conifers the above-named deserves a place, not so much on account of its appearance as a tree, for as such it cannot be compared with many of the beautiful Pines and Piceas, but it is worth planting for the sake of its curious appearance when in fruit, especially from July to the end of October. A plant in the collection here, about 20 feet in height and the same in diameter of branches, has borne fruit regularly the last eleven years, some years more abundantly than others; but this year I have never seen it better, many hundreds of its curiously Nutmeg-shaped fruit, about 1½ inch long, having been produced near the extremities of the branches, giving the tree a quite distinct appearance from any other Conifer. A thick husk similar to a Walnut encloses the solitary fruit, and when ripe peels off in the same manner. This husk has an unpleasant and peculiar smell, and has, no doubt on that account, been called the Fœtid Yew. It is a native of California, and is said to attain a height of 40 or 50 feet. It thrives well with a gravel subsoil, and is very hardy, our winters not appearing to injure it at all. Its wood seems hard and durable like the Yew, but the trunk is small in comparison with the spread of branches. —A. Harding, *Orton Hall, Hunts.*

—— Cider and Perry Fruits in Paris. — The Exhibition in connection with the manufacture of cider and perry, which is now being held at the Palais de l'Industrie in Paris is drawing to a close, and the jury have just finished their labours in the section for fruit, as well as that for cider and perry. Among the awards Devonshire gets a fair share, for Messrs. Robert Veitch & Son of the Royal Nurseries, Exeter have gained the gold medal and diploma (first prize) for cider Apples, while the second prize for cider has been won by Mr. Charles Ham of Exeter, a minor prize for Apples also going to Mr. Ham. The sorts shown in Messrs. Veitch's collection are those mostly grown in Devonshire orchards for cider making, and include such varieties as Slack-my-girdle, Tom Putt, Pound Apple, Sweet Albert, Hanwell Souring, Sweet Alfred, Farmer's Glory, and other well known cider fruits. There were fifty-one dishes in all, and were a good representative collection. The report will be published later on, when, no doubt, some information will be forthcoming as to the comparative merits of British and foreign fruit for manufacturing purposes. In the meantime it is a matter for congratulation that the county of Devon, so famous for its cider, has maintained its prestige as an Apple-growing county.

—— The English Arboricultural Society. — The annual meeting of the above Society was held on Saturday last in the Victoria Hall, Carlisle, Cadwaller Bates, Esq., in the chair. The accounts were examined and passed. Sir John Lubbock was elected President, R. J. Davidson, Haydon Bridge, Secretary and Treasurer, and Mr. J. Baldwin, sen., Dilston, and Mr. Bernard Cowan, South Shields, Auditors. In the interest of the Society it was deemed advisable to hold the summer meeting at Windsor in the week of the Royal Agricultural Society, and the annual meeting at Darlington. Mr. Wilson, Leazes Park, Newcastle, was awarded the bronze medal of the Society for an essay on "Suitable trees for various soils and situations." An interesting discussion was initiated by the President on the planting on barren and waste lands, which was ably carried on by Mr. J. Watt and Mr. Wm. Clark. Mr. J. Watt paid Mr. J. Baldwin, jun., a well deserved compliment on the able paper he had read before the Society on tree planting as one that was of national importance. This was further elucidated by the Secretary, who stated that the Greenwich Commissioners had some land thirty years ago that would not let for 2s. an acre. This had been planted, and the timber recently cut had yielded a net profit of nearly £60 per acre. The meeting concluded with a hearty vote of thanks to the retiring President.

—— Royal Meteorological Society.—The first monthly meeting of this Society for the present season was held on Wednesday evening, the 21st instant, at 25, Great George Street, Westminster, Dr. W. Marcet, F.R.S., President, in the chair. Senor A. Arcimis, Mr. J. W. Gray, Dr. J. L. Green, Mr. R. T. Morgan, Mr. C. E. Mumford, Mr. E. S. Oxenham, F.R.G.S., Dr. A. M. Robertson, Dr. E. Seaton, Mr. J. N. Sidebotham, and Dr. T. C. Squance were elected Fellows of the Society. The following papers were read:—1, "Results of an Investigation of the Phenomena of English Thunderstorms During the Years 1857-59," by Mr. G. J. Symons, F.R.S. This paper was written nearly thirty years ago; it has now been communicated to the Society at the request of the Thunderstorm Committee. The paper contains a summary, chiefly in statistical form, of some of the results of an investigation into English thunderstorms and the accidents produced by lightning during the years 1857-9. The author found that in sheet lightning the most prevalent colour is white, then yellow, blue, and red. In forked lightning the order is nearly reversed, blue being more than twice as frequent as any other colour, then red, white, and most rarely yellow. Sheet lightning was seen about twice as often as forked. 2, "Notes on the Meeting of the International Meteorological Committee at Zurich in September, 1888," by Mr. R. H. Scott, F.R.S. The Committee recommended certain rules for the publication of data by travellers, &c., so as to ensure their being useful for the advancement of sound climatological knowledge. The proposals for an international cloud nomenclature, as recommended by Mr. Abercromby and Prof. Hildebrandsson did not commend themselves to the Committee, who suggested that the subject should be further studied. At the conclusion of the meeting the Committee was dissolved. 3, "On a Method of Photographing Cirrus Clouds," by Dr. A. Riggenbach. The author exhibited some photographs of cirrus and other fine clouds which had been obtained by using the surface of a lake as a polarising mirror. Mr. A. C. Stratten exhibited some models of very large hailstones, spheres about 2½ inches in diameter, which fell at Montereau, about forty miles south-east of Paris, on August 15th, 1888.

CHRYSANTHEMUM SHOWS.

We have again to express our thanks to many correspondents who have favoured us with brief reports of shows, some of which, however, we have been compelled to still further abbreviate. We have also received newspaper reports of the following Shows:—Pembroke, Lymington, Nottingham, Chesterfield, Loughborough, Highgate, and Chorley, for which, unfortunately, we cannot find space.

CLONMEL.—November 13th.

This Show was held in the large Assembly Room of the Courthouse, Clonmel. Notwithstanding the generally unfavourable season, and that almost all the local growers lost some of their finest blooms through premature damping-off, the Show must be pronounced an unexpected success. Much of this is due to the tact and energy of the courteous and efficient Secretary, Mr. Thomas Phelan of Spring Gardens, and the other members of the Committee, but especially Messrs. Frederick Clibborn, Anner House, and H. S. Boyd, Suirmont, who were indefatigable in perfecting the preliminary arrangements.

The requirement for admission into the group section was that competitors were each to furnish a sufficient number of plants to occupy a space of 60 square feet, and the prize was to be awarded only to that collection which should best illustrate quality and effect. All the collections were highly meritorious, the prizes going ultimately to Mrs. Malcomson, Minella, Clonmel (head gardener, Mr. John Crehan); second, Thomas Phelan, Esq., Spring Gardens (Mr. Halpin); and highly commended, Dr. W. H. Garner (Mr. O'Shea). Conspicuously good in the first were Golden Queen, Balmoreau, Criterion, and Val Andore, and in the second Cullingfordi, La Frissure, and Sœur Dorothée Souille. The next class was six plants in pots—old plants being disqualified—grown on a single stem. The first prize went to Mr. Phelan, and second to

Mrs. Malcomson. In the class for trained specimen, Mrs. Malcomson came first with a good Mrs. Forsyth (white Christine).

For twenty-four incurved blooms, not less than nine varieties. After close competition the first prize went to Mr. Raymond de la Poer of Kilcronagh, Kilkenny (gardener, Mr. Crawford), and second to Mr. Thomas Phelan. Particularly good in the first were Cherub, Princess of Wales, Lord Alcester, and John Salter ; and in the second exhibit Jardin des Plantes, Prince Alfred, and Lord Wolseley. For twelve incurved there were five entries, and after careful "pointing," Mr. F. Clibborn (Mr. Crowley) was placed first, Mr. Malcomson second, and Dr. Garner highly commended. In the first Jeanne d'Arc, Golden Empress, and Blush Queen were particularly noticeable, and in the second were Novelty, Lord Wolseley, and Blush Queen. Next came twenty-four Japanese, and for this the competition was close between Mr. R. de la Poer, Mr. T. Phelan, and Dr. Garner, but ultimately the prizes went in the order named. The more remarkable blooms were almost similar to those in the cup class, which we propose to give fully. Then came the class for twelve Japanese, and this was the most closely contested at the Show, first prize ultimately going to Mrs. Malcomson, with grand blooms of M. Tarin, Fanny Boucharlat, Dormillion, Val d'Andorre, and Elaine—very fine. Mr. Clibborn was second with Edwin Molyneux. Ralph Brocklebank, and Gloriosum, among others. Mr. H. S. Boyd was highly commended, while two other stands were very little behind in point of merit. In the reflexed class Mr. de la Poer had again the premier position, with some fine blooms of the golden, white, and pink Christine, Cullingfordi, and King of Crimsons. Mrs. Malcomson was second, and Mr. Phelan highly commended. Grandly shown by Mr. Phelan was Amy Furze, a decided acquisition. In Anemone Japanese, Mr. de la Poer once more was peerless, while in Pompons Mrs. Malcomson and Mr. Boyd divided the honours in the order named.

In the incurved section the best bloom in the Show was adjudged to Raymond de la Poer's Princess of Wales (a perfect bloom), Mrs. Heale almost disputing the honour in the same stand. In the Japanese the premier position went by general consent to the new introduction, Ralph Brocklebank, in Mr. Clibborn's collection, next coming the very telling variety, Edwin Molyneux.

The silver cup, value £5, given by Raymond de la Poer, Esq., was the chief prize of the Show, and for it there were entered five stands of twenty-four each, incurved and Japanese, to contain eighteen distinct varieties, by the donor, Mr. F. Clibborn, Mrs. Malcomson, Dr. Garner, and the Hon. Dudley F. Fortescue, Summerville, Waterford. After each stand had been pointed, closely inspected, and the points of merit added up, the first stand was found to have 128 points, the second 114, and the third 111—the cup, with first prize, and the second and third prizes going in the order named. As growers will be anxious to add to their collections, we give the names of the varieties which "The cup" stand comprised—Incurved—Lord Alcester, Bronze Queen, Golden Empress, Princess of Wales (perfect), Blush Queen, Mrs. Heale (very fine), John Salter, Refulgens and Cherub (a grand bloom) ; and the Japanese—Edwin Molyneux, Meg Merrilies, Jeanne Délaux, Criterion, Comte de Germiny, M. Freeman, Marguerite Marrouch, Golden Dragon, Mrs. H. Cannell, and Balmoreau, all very telling and effective as arranged. Mr. de la Poer, having been declared the winner of the cup, not wishing to retain the prize he had himself presented, handed it back most generously to the Committee to be competed for next year.

At this late time of the year the fruit competition was necessarily limited, still the Show was very creditable. For the best Grapes Mr. F. Clibborn was first for five bunches of Black Hamburgh and Trebbiano, the Honourable Dudley Fortescue second ; while those shown for Mrs. Malcomson were very highly finished. This lady also came first for dessert Apples and baking Apples ; while Mrs. Crean of Coolgreany had similar honours for the best Pears.

Besides those exhibited in the various sections there was a beautiful display of other flowering and foliage plants kindly sent in from some of our local conservatories for the purpose of adding still further to the artractive appearance of the room. George Gough, Esq., Birdhill, contributed some beautiful Orchids in flower.

HAMPSTEAD.—November 14th.

The eighth annual Exhibition of Chrysanthemums was opened by Lady Onslow in the Vestry Hall, Haverstock Hill, on the 14th. A miscellaneous group of plants most tastefully arranged by Mr. Tribe, gardener to H. M. Matheson, Esq., which had a grand effect on coming into the hall. The group consisted of Palms, Chrysanthemums, Roman Hyacinths, &c. The principal class was for cut blooms (open), eighteen incurved and eighteen Japanese. First, Mr. S. Bell, gardener to P. D. Duckett, Esq.; second, Mr. A. Aitkins, Linden House Gardens, Highgate Road ; third, Mr. D. Hayter, gardener to W. Hannsford, Esq., Hendon, only three points dividing each exhibitor. The names of the varieties in the winning box were—Incurved—Queen of England, Golden Queen, Prince Alfred, Jeanne d'Arc, Emily Dale, John Salter, Guernsey Nugget, Bronze Queen, Empress of India, Golden Empress, Alfred Salter, Princess of Wales, Lord Wolseley, Mr. Bunn, good ; Mr. G. Glenny, Lady Talford, Mrs. Dixon, and Lord Alcester. Japanese—Belle Paule, Criterion, best flower in the Show ; Mons. Tarin, Val d'Andorre, Mdlle. Lacroix, Soleil Levant, Japonaise, Marguerite Marrouch, Mad. B. Rendatler, Albert, Peter the Great, Maiden's Blush, Madame de Sevin, M. J. Laing, M. Astorg, Comte de Germiny, Madame C. Audiguier, and Triomphe du Nord.

Some very fine groups were well shown by Mr. Powley, Mr. Coleman, and Mr. Small. Bouquets were shown by Mr. Harris, first ; second, Mr. H. Ellison ; third, Mr. G. Coleman, and the exhibits were very numerous and good. Great thanks are due to the Honorary Secretary, Mr. Anderson, Mr. R. Frisby, Mr. Ings, &c., for the way in which the Show was arranged.

FAVERSHAM.—November 14th and 15th.

The second annual Exhibition of this Society was in every way a grand success, and proves what can be done in two seasons towards bringing a Society into the front ranks of Chrysanthemum shows. Of course, to a great extent, the success is due to the excellent management, and to the energy thrown into the Society by the courteous Secretary, Mr. C. Stidolph. The Faversham Institute had been secured for the Exhibition, but so numerous were the entries that arrangements had to be made for the use of the smaller hall for fruit and vegetables, in addition to the large room, which was almost entirely occupied with groups of Chrysanthemums, trained plants, and cut blooms. In the class for twenty-four blooms, so close were Mr. Ray and Mr. Thomas, that the Judges awarded them equal first, Mr. Cornford was third. Mr. McLaren secured the bronze medal of the N.C.S. for a grand bloom of Lord Wolseley, and Mr. Weller gained the N.C.S. certificate for a well-finished bloom of Grandiflorum. Trained plants were exhibited by Mr. Cook, Mr. G. T. Anderson, Mr. McLaren, and Mr. Creed.

The amateur classes for cut blooms were exceedingly well filled, and the competition was most keen, and the majority of the blooms exhibited by the Faversham amateurs would not have disgraced the boards of some of our leading exhibitors at the big shows. Mr. L. Jackson, the Treasurer, is a most successful grower, followed closely by Mr. Hill, Mr. C. Stidolph, and Mr. H. Dan. Mr. E. Hill's bloom of Emily Dale, for which he was awarded the N.C.S. medal as the best incurved in the Show, was a perfect model. Mr. L. Jackson secured first honours for the best Japanese bloom, a superb flower of Meg Merrilies. In the cottagers' classes some very fine blooms were exhibited, and Mr. T. Terry secured the N.C.S. bronze medal for a bloom of Eve, which was declared by the Judges to be one of the finest flowers of this variety they had seen this season. Mr. G. Lewis was first with a magnificent Thunberg. Numerous exhibits were staged not for competition, amongst them being a stand of forty-eight dissimilar blooms of excellent quality exhibited by Mr. Fred T. Hart of Faversham, amongst them being Amy Furze, Mdlle. Paul Dutour, very fine ; Charles Orchard, Edwin Molyneux, very large ; Duke of Berwick, and some grand Queens and Empresses. The show of vegetables was declared to be one of the finest in the county, and attracted considerable attention. The successful exhibitors were, Mr. C. Ivory, Mr. Ackhurst, Mr. Trisker, Mr. G. Lewis, Mr. A. Matson, Mr. Burton, &c.

The class for the silver challenge cup given by Messrs. Lyddon for the best group of Chrysanthemums brought out some fine exhibits, and great credit is due to the winner, Mr. H. Louth, for both the quality of his individual blooms and the arrangement of his group, his tallest plants being about 4 feet 6 inches, sloping down to front row plants less than 2 feet high. Mr. C. Cornfoot was second, and Mr. W. Ratcliff third. Mr. Fred T. Hart also exhibited a very fine collection of Potatoes, twenty-seven varieties, which were very highly commended.

Fine weather favoured the Exhibition, and the rooms were thronged with visitors the whole time they were open.

MARKET HARBOROUGH.—November 14th and 15th.

The Market Harborough and District Chrysanthemum Society held their annual Show on Wednesday and Thursday, November 14th and 15th, and the Committee is to be congratulated on the success which has again attended them in bringing together so grand a collection of the favourite autumn flower. The specimen plants in the incurved and Japanese were very good. The entries for cut blooms were numerous, and so great was the merit of the different exhibits that the task of judging was a difficult one. The chief feature of the Show, however, was the arrangement of the groups, six of which were in competition. These were placed three on each side of the room, and flanked by groups of miscellaneous plants, the whole forming as pretty a picture as the eye of the most critical might wish to rest upon. The band stand, too, was very effectively decorated, two magnificent Palms standing on each side, their spreading leaves extending over the heads of the bandsmen. In front of these in the centre of the platform was a collection of cut Chrysanthemums arranged as a miniature group by Mr. John Dilley, gardener to W. H. Hay, Esq., Bowden Hall, and this came in for an unusual amount of notice, and was much admired. Round the remaining portion of the platform were placed boxes of cut blooms backed by Solanums.

The majority of the first prizes for plants were taken by S. Symington, Esq., Brookland House, Market Harborough (gardener, Mr. H. Dunkley). For the group Messrs. Plowman & Son were again awarded premier honours ; R. H. P. Hutchinson, Esq., Husbands Bosworth (gardener, Mr. W. Rainbow), being second ; and G. H. K. Fisher, Esq., Harborough (gardener, Mr. W. Norman), third. In cut blooms, Mr. S. Symington, W. Symington, Esq. (gardener, Mr. J. Clarke), G. L. Watson, Esq., Rockingham Castle (gardener, Mr. H. Watt), and Sir F. F. Turville, K.C.M.G. (gardener, Mr. W. Duncan), were the most successful exhibitors.

The exhibits in class B for amateurs were much better than at any previous Show, the most admired being the plants of Mr. S. Branston and the groups of Messrs. Bott, Branston, and Dalby. Class C for cottagers also showed a marked improvement on last year. It may be added that a show of vegetables was held in connection with the

above in another room of the Corn Exchange, and this was a remarkable success, no less than twenty-three collections being exhibited in addition to a very large entry for the other prizes.

YORK.—November 14th, 15th and 16th.

The annual Chrysanthemum Exhibition of the Ancient Society of York Florists was held in the Fine Art and Industrial Institution on the above dates. Collectively, and making allowance for the trying season of 1888, the Show was the best yet held by the Society. Specimen plants were as numerous and nearly as good as in previous years. Groups of Chrysanthemums and foliaged plants were superior to the average, and the competition was very close between several exhibitors, and groups of Chrysanthemums only were proportionately good. Probably the most decided advance was in the classes for cut blooms, and here the contest was very keen. For thirty-six flowers—eighteen incurved and eighteen Japanese in not less than twelve varieties of each—the contest was somewhat unequal, one exhibitor having a decided lead with incurved varieties, the other with Japanese, and superficially it appeared as though the winner of the second prize ought to have occupied the premier position; but such was not the case when every flower in each stand had been most carefully valued and "pointed" by the Judges. So good were the incurved flowers of W. B. Richardson, Esq. (gardener, Mr. Folkard) that they "pointed" 97·6 points out of a possible 108; whilst the Japanese of H. J. Robinson, Esq. (gardener, Mr. Osborne), Woolton, Liverpool, only score 90·9 points out of a possible 108. The total number of points obtained by Mr. Richardson was 180·3, and the number by Mr. Robinson 176·3; therefore, Mr. Richardson won by exactly four points, and to him was rightly awarded the premier prize of a silver cup and £5 in cash. Across the lower end of the Hall was a magnificent display of Grapes, Mr. Goodacre of Elvaston figuring with his usual success, taking the first prize for six bunches of Grapes In the side galleries was the usual excellent display of vegetables and hardy fruits. The Committee, and especially the Secretary and Treasurer, to whose untiring energy and courtesy the continued success must in no small degree be attributed, are to be congratulated on again having one of the most beautiful displays of flowers, fruit, and vegetables to be seen in this country. The following are the principal prizewinners:—

Plants.—Group of Chrysanthemums, interspersed with foliage plants arranged for effect, occupying a space of not more than 100 square feet.—First, T. M. Weddall, Esq. (gardener, Mr. Kendall), second J. H. Hingston, Esq. (gardener, Mr. McIntosh), third Mrs. Gutch (gardener, Mr. Everard), fourth Mr. Makins (gardener, Mr. Stephenson). Group of Chrysanthemums arranged for effect, occupying not more than 64 square feet.—First A. Milnthorpe, Esq. (gardener, Mr. Anderson), second Mrs. Cowl, third J. Melrose, Esq. (gardener, Mr. J. Richardson), fourth Mr. T. Smith. Specimen plants.—First Mrs. Gutch (gardener, Mr. Vear), Miss Steward, J. H. Hingston, Esq.

Cut Flowers.—Thirty-six, eighteen incurved and eighteen Japanese, in not less than twelve varieties of each.—First W. B. Richardson, Esq., Elm Bank, York (gardener, Mr. Folkard), second H. J. Robinson, Esq., Aymostry Court, Woolton, Liverpool (gardener, Mr. Osborne), third A. Wilson, Esq., Hull (gardener, Mr. Leadbetter). Twenty-four, twelve Japanese and twelve incurved.—First W. B. Richardson, Esq., second G. Whitehead, Esq. (gardener, Mr. Hebdon), third Miss Steward. Twelve Japanese.—First A. Milnthorpe, Esq., second Mr. T. Smith, Norwood Nursery, Beverley. Twelve Incurved.—First W. B. Richardson, Esq., second Miss Steward.

For fruit the prizewinners were Mr. Goodacre, H. C. Neville, Esq. (gardener, Mr. Hare), Lord Hotham, W. B. Richardson, Esq., Mr. J. W. Hutchinson, and Mrs. Mellish, Hodsock Priory, Worksop (gardener, Mr. Mallender).

The vegetables were of first class quality, and the principal prizetakers were Messrs. Kirk, Kingston, Whitehead, Hardcastle, West, Hudson, Benson, and others. Mr. T. B. Morton of Darlington had a capital collection of Chrysanthemums not for competition, and several new varieties were certificated.

READING.—November 15th.

Reading always furnishes a very fine Exhibition of Chrysanthemums; and this Exhibition was no exception, although for obvious reasons the competition was scarcely so extensive and keen as heretofore. But there were enough exhibits to fill the two Town Halls, and very gay they looked, despite the dull weather. Although it rained the greater part of the day the Show was well attended, and the takings at the gates exceeded that of last year. The Chrysanthemum Exhibition is quite distinct from those of the Reading Horticultural Society, the Hon. Secretary being Mr. R. D. Catchpool, who deserves the highest credit for the success, financial and otherwise, which always attends the Exhibitions.

There were nine groups of Chrysanthemums of thirty plants placed around the sides of the old Town Hall, and the light being only on one side of the building made it somewhat difficult to judge them. It was a very close run between Mr. Perkins, gardener to the Rt. Hon. W. H. Smith, M.P., Greenlands, Reading; and Mr. Turton, gardener to John Hargreaves, Esq., Maiden Erleigh, Reading, the two leading awards were made in the order of the names. Mr. Perkins had the dwarfest plants, well grown, carrying flowers of high quality. Mr. Turton's plants had very fine blooms mainly of Japanese varieties, but there were features of coarseness, and there was a lack of general effect. Mr. Hawkins, gardener to W. Cowslade, Esq., Erleigh, was third, and four other prizes were awarded. The Judges recommended that for the future the exhibitors should be allowed to place a margin of Palms, Ferns, and such like as a front line to the groups, thereby heightening the general effect.

The only six specimen plants, Japanese excluded, came from Mr. Surman, gardener to C. H. Witheriugton, Esq., Sonning, his best varieties being Mr. G. Rundle, Dr. Sharp, Prince of Wales, and Mr. Dixon. Mr. Booker, gardener to R. Tomkins, Esq., Reading, had the best three, staging Mr. Dixon, Mr. G. Rundle, and Empress of China. Mr. Franklin, gardener to F. Lucas, Esq., Sonning, was second. Mr. Surman had the only six Japanese, having admirably grown and bloomed plants of Mdlle. Lacroix, Madame Bertic Rendatler, Bouquet Fait, Red Dragon, James Salter, and Lady Selborne. Mr. Powell, gardener to G. Gilligan, Esq., Reading, had the best three plants in Elaine, Val d'Andorre, and Red Dragon. Mr. Franklin was second. Mr. Surman had the best three Pompons, Mr. Franklin being second. The specimens might have been better. Mr. Booker had the best standard, showing Mdlle. Marthe; Mr. W. T. Abery, nurseryman, Tilehurst, being second with its golden form.

Chrysanthemums grown as window and later plants were a good feature, dwarf specimens 12 to 15 inches in height carrying a few good flowers. Mr. Surman had the best six large flowered, showing Bouquet Fait, Mr. Dixon, Mr. G. Rundle, James Salter, Lady Selborne, and Madame Bertie Rendatler. Mr. Franklin was second, and Mr. Armitage, gardener to H. Clarke, Esq., Reading, third. Mr. Franklin had the best three Pompons grown in this way, Mr. Surman coming in second. A peculiar feature at Reading is standard Chrysanthemums with circular, flat, or shelled-shape heads to face the spectator. Mr. Armitage had the best three, Mr. Booker being second. Mr. Abery had the best single standard; Mr. Hinton, gardener to J. Leslie, Esq., Reading, being second; but it is a somewhat unnatural type of plant growth.

Some very fine blooms were staged, and the leading stands of incurved flowers showed great refinement. The best eighteen came from Mr. Allen, gardener to Sir G. Russell, Bart., M.P., Swallowfield Park, Reading, who had grand blooms of Lord Alcester, Alfred Salter, Jeanne d'Are, Lord Wolseley, Princess Alexandra, Jardin des Plantes, Golden Empress, Prince Alfred, Lord Eversley, Queen of England, Princess Teck, Cherub, Bronze Jardin des Plantes, Empress Eugénie, Bronze Queen, Emily Dale, Barbara, and Mrs. Heale. Second, Mr. Neville, gardener to F. W. Flight, Esq., Twyford, Hants; third, Mr. Lane, gardener to Miss Dunning-Smith, Ascot. Mr. Brooks, gardener to H. A. Simonds, Esq., Andover, had the best twelve, Mr. Baskett being a good second, and Mr. W. Lees, third. A very fine stand of twelve reflexed in eight varieties came from Mr. Allen. Stands of twelve Japanese in not less than eight varieties were numerous and very fine also, Mr. Lane being placed first with E. Molyneux, Madame B. Pigny, Val d'Andorre, Soleil Levant, Madame J. Laing, Criterion, Belle Paule, Ralph Brocklebank, Jeanne Délaux, Thunberg, Sarah Owen, and Avalanche. Mr. Baskett had the best twelve Anemone flowered, not less than eight varieties. Mr. Allen had the best twelve blooms shown with 9 inches of stem, staging fine specimens, comprising Lord Alcester, Lord Wolseley, Empress of India, Golden Empress, Madame G. Pigny, Thunberg, E. Molyneux, Jeanne Délaux, and Madame J. Laing, two or three being shown in duplicate; second, Mr. Ashman, gardener to C. Crews, Esq., Billingbear Park, Reading. Mr. Surman had the best six bunches of Pompons, staging President, Adele Prisette, White Trevenna, St. Michael, Sœur Melanie, and Rose Trevenna.

Table decorations and vases are always a delightful feature at Reading. Mr. Abery had the best vase for drawing-room. Large hall vases were an imposing feature, Mr. Abery had the best, Mr. Brooks was second. Miss Phillips of Reading had the best arrangement of cut flowers and foliage, staging one done in excellent taste, Mr. House being second. Miss L. Phillips had the best arrangement in autumn foliage and berries, putting up a basket charmingly finished. Mr. G. Phippen, nurseryman, Reading, had the best ballroom bouquet of Chrysanthemums. Vases of Everlastings were a pleasing feature also.

There was a good display of fruit. Mr. Jennings, Forest Lodge, Farnborough, had the best two bunches of Alicante Grapes, well coloured and fine in berry, Mr. Cooper of Sunninghill being second, and Mr. Prowse, gardener to E. L. Lawson, Esq., Beaconsfield, third. Mr. Ashman, Billingbear Park, had the best two bunches of Gros Colman, extra fine and well coloured; Mr. Cooper was second with good examples, and Mr. W. Lees third. Mr. Lees had the best two bunches of any other black, staging Madresfield Court, a little loose in bunch but fine in colour; Mr. Paston, gardener to the Hon. C. S. Irvey, Taplow, being second, with well finished Gros Maroc, Mr. Jennings being third with good Lady Downe's. Mr. Dockerill had the best two bunches of White Muscats, very fine and clean. Mr. Perkins came second with larger bunches and smaller berries. In the class for any other white kind Mr. Turton was first with excellent Trebbiano, large in bunch and of fine quality, Mr. Lees being second.

The class for six dishes of English dessert fruits brought out one exhibitor, Mr. Perkins, who had good White Muscats and Alnwick seedling Grapes, Melon, Bananas, Cox's Orange Pippin Apple, and Fovelle Pears. Mr Turton was first with six dishes of dessert Apples. Mr. Perkins also had the best dish of Cox's Orange Pippin. Mr. Turton, led with six dishes of culinary Apples

Of miscellaneous exhibits Mr. J. Watkins, Pomona Farm, Hereford staged seventy-five dishes of Apples, many of them very highly coloured, and Mr. R. Owen, nurseryman, Maidenhead, a stand of new Chrysanthemum, including John Thorpe, dark cerise, and George Daniels, light

pink broad petals, but wanting in shape. A first class certificate of merit was awarded for the Japanese Fimbriatum, blush tinted with lilac, shown in very fine form.

ALVERSTOKE AND GOSPORT.—November 15th and 16th.

The first Exhibition of this recently established Society was held at the new Thorngate Hall, Gosport, and in spite of the many other counter-attractions it must be pronounced a decided success. The leading groups of Chrysanthemums bore heavy fresh blooms of first rate quality. The specimen plants were a weak feature, but the stands of cut blooms of Messrs. W. & G. Drover, and the two or three other successful prizewinners elevated the quality far above the average of newly established societies' plants. For six natural trained specimens on single stems Mr. Hawkins, gardener to E. Lapthorne, Esq., Gosport, was awarded first; Mr. J. Groom, nurseryman, Gosport, second; Mr. F. Limburn, gardener to Mrs. Lane, third. Mr. Hawkins was also first for Pompons.

In the class for a group of 30 square feet Mr. Gale, gardener to G. Cooke, Esq., Gosport, was well ahead with a good lot, containing excellent blooms of incurved and Japanese varieties, but as is usual in small groups, the front plants were rather tall and deficient of foliage. The second was awarded to Mr. Hawkins for dwarfer but well-finished plants of good average quality, and the third to Mr. J. Long, gardener to Mrs. Walton.

In the open class for twenty-four cut blooms, distinct, twelve incurved and twelve Japanese, Messrs. W. & G. Drover, Fareham, were well to the front with a splendid sample, consisting of incurved:—Back row—Golden Empress, Empress of India, awarded the prize for premier incurved bloom in the Show; Alfred Salter, Lord Alcester, Nil Desperandum, Empress Eugénie, Mrs. Heales, Chas. Gibson, Princess Teck, Mrs. Norman Davis, Prince Alfred, and Jeanne d'Arc. Japanese: back row—Boule d'Or, Belle Paule, Edwin Molyneux, Meg Merrilies, Baronne de Prailly, Avalanche, Ralph Brocklebank, premier Japanese; Madame Baco, Gloriosum, Jeanne Délaux, Marguerite Marrouch, and Criterion. Mr. Agate, florist, Havant, was second with good blooms. Third, Mr. Limburn. Fourth, Mr. Hawkins. Mr. Gale exhibited a good stand of blooms in this class that would have taken a prize, but was disqualified through having two blooms of Empress of India, under the names of Snowball and Isabella Bott. In competition for twelve incurved, distinct, Mr. Hawkins was first with a stand of good solid blooms of Golden Empress, Jeanne d'Arc, Empress of India, Princess of Wales, Queen of England, Venus, Lord Wolseley, Princess Teck, Mrs. Heales, Mr. Brunlees, White Venus, and Emily Dale. Second, Mr. Limburn. Third, Mr. E. Foot, gardener to H. C. Martin, Esq., Mr. Gale being again disqualified in this class for the same reason as mentioned concerning the previous class. In the corresponding class for twelve Japanese, Mr. G. Hawkins exhibited a fresh and even lot of blooms of the following varieties:—Baronne de Prailly, Carew Underwood, Madame C. Audiguier, Fair Maid of Guernsey, Gloriosum, Mons. Tarin, Marguerite Marrouch, Duchess of Albany, Val d'Andorre, Bouquet Fait, Madame Baco, and Dormillion. The second went to Mr. King, gardener to W. H. Fry, Esq., and the third to Mr. Foot. For twelve reflexed, six varieties, Mr. Hawkins was awarded first, with good blooms of Cullingfordi, Madame Madeleine Tezier, Pink Christine, Chevelier Domage, Amy Furze, Golden Christine, and King of Crimsons. Mr. Limburn was second with a good lot, containing a fine bloom of the old variety Progne. Mr. Gale was third. For twelve large Anemones, six varieties, Mr. Hawkins had a good stand, and was awarded first prize. Mr. Limburn second, with Mr. Foot third. The stands of twelve Pompons were noteworthy through the competition being confined to twelve varieties, with three flowers on one stem, a good way to test the merits of the varieties. Mr. Hawkins was awarded first, and Mr. Foot second.

The vegetables brought out for competition was sufficient to fill a table across the end of the hall, which made a very imposing show. For nine distinct dishes Mr. Hawkins was first with a good lot, the Cauliflowers, Carrots, and Beet being very good. Mr. Limburn was second, Mr. J. Long third; fourth Mr. Shelley, gardener to Capt. Sir Alfred Balliston, R.N., and extra prizes was awarded to Mr. Foot and Mr. W. Smith. In the special class for prizes offered by Messrs. Cutbush and Son, Highgate Nurseries, London, for eight dishes, Mr. Hawkins was again first with an excellent exhibit, Carrots, Parsnips, and Cauliflowers being clean and good. The competition for prizes offered by Messrs. Davis & Jones, Camberwell, for blooms of their new varieties—Chas. Gibson, Mrs. Norman Davis, Miss Annie Lowe, and Edouard Audiguier—did not bring out any very meritorious specimens, Mr. Hawkins, Mr. Foot, and Mr. Limburn winning in their several classes. Amongst the miscellaneous exhibits not for competition, Messrs. W. & G. Drover showed six dozen splendid blooms of Japanese, incurved, reflexed, and



Fig. 55.—RHODODENDRON FORTUNEI. (See page 490).

Anemones, and was awarded an extra prize. Mr. Groom also showed an excellent box of blooms, and Mr. Legg, nurseryman, Gosport, a fine effective group of Chrysanthemums and foliage plants. First class certificates were awarded to Messrs. W. & G. Drover for Japanese varieties Madame Baco and Avalanche; and to Mr. Agate, florist, for Japanese varieties, M. H. Cannell and Lady Lawrence.

MONMOUTH.—November 15th and 16th.

The third annual Exhibition of this Society was held in the spacious Rolls Hall. The exhibits of plants, blooms, also fruit and vegetables, surpassed both in number and quality anything of the sort seen in Monmouth before. So great was the demand for space that not only were the vestibule and corridor crowded with floral and vegetable products, but part of the stage and the gallery were called into requisition to enable exhibitors to display their entries.

The following is a list of the awards :—Group of Chrysanthemums, any varieties, arranged in a space equal to 100 square feet, first, J. M. Bannerman, Esq., Wyastone Leys (gardener, Mr. Powell). Second, George Tucker, Esq., The Shrubbery, Monmouth. Group of Chrysanthemums arranged in a space not exceeding 36 square feet. First, Rev. W. Watson, Monmouth. Second, Miss Panter, Whitehurch. Six trained specimens, first, J. M. Bannerman, Esq. For twenty-four cut blooms incurved, distinct varieties, G. H. Hadfield, Esq., Moraston House, Ross (gardener, Mr. W. Winnard), was a good first. For twelve incurved varieties, distinct, Canon Mapleton, Rocklands (gardener, Mr. R. Richardson), gained first honours, closely followed by C. L. Campbell, Esq., Glewston Court, Ross (gardener, Mr. S. T. Wright). For twenty-four Japanese, Canon Mapleton was a grand first, G. H. Hadfield, Esq., being second. For twelve Japanese, C. Palmer, Esq., Newlands, Glos., was first; C. L. Campbell, Esq., second. For twelve large Anemone varieties Canon Mapleton was first; Sir H. M. Jackson, Llantilio Court, Abergavenny, second. Canon Mapleton also had the premier award for twelve reflexed varieties. Foliage and flowering plants were well represented. For six single Zonal Pelargoniums, Colonel Walwyn, Crofty Viola, was first. Single stove plant in bloom, Canon Mapleton first. Three Orchids, distinct, J. M. Bannerman, Esq., was first; also for four foliage plants, six plants for dinner table decoration, and six stove or greenhouse Ferns, distinct. The fruit classes were keenly contested. C. Lee Campbell, Esq., was first in the following classes :—Collection of dessert fruit, six dishes; black Grapes, white Grapes; Pears, six distinct varieties; Apples, dessert, six dishes, distinct; Apple, dessert, one variety; Apples, culinary, three dishes; Apples, culinary, one dish; and for best collection of Apples. Vegetables were in strong force, the principal prizewinners being Messrs. Campbell, Leir, Palmer, Brown, Jackson, Hill, Allen, Vaughan, &c.—South Wales.

BERKHAMSTED.—November 16th.

The first Show of the above Society was held on Friday last in the Town Hall, and proved a thorough success as regards quantity and the numbers of exhibits, the hall being thronged with visitors during the afternoon and evening. The staging was ably carried out under the supervision of the President, Mr. F. Lane, and Mr. G. Beard, a very energetic Committeeman. The Hon. Secretary and Treasurer is Mr. A. B. Higgins.

In the open class for twenty-four incurved varieties, distinct, Mr. Brown, gardener to R. Henty, Esq., Abbots Langley, was first, his blooms being remarkably fresh and even throughout. For twenty-four Japanese the same exhibitor took premier honours, staging excellent blooms. In the classes open to members only for twenty-four Japanese, not less than eighteen varieties (Mr. Kirby, gardener), E. Mawley, Esq., Rose Bank, Berkhamsted, was to the fore with good blooms, having a very fine bloom of E. Molyneux. For twelve Japanese the competition was very keen between the first and second. Mr. Hicks, gardener to G. Pearson, Esq., Millfield House, Berkhamsted, was first with grand blooms; very fine were his examples of Thunberg, Soleil Levant, Baronne de Prailly, and Val d'Andorre. Mr. Kirby was second with fine blooms. The incurved in this division was the weakest part of the Show, the whole of the blooms being badly finished.

For a group of Chrysanthemums, not to exceed 40 feet, four competed. Mr. Higgins, gardener to A. G. Lucas, Esq., Ashlyns Hall, was easily first with a well arranged group and blooms of good quality, the only objection was too full a use of white stakes, a point that often goes very much against an exhibitor in a close competition. Second Mr. Flint, gardener to Mrs. Domens, Haresfoot, Berkhamsted, fairly well arranged, but poor in quality. For a miscellaneous group the first prize was deservedly awarded to Mr. Low, gardener to Earl Brownlow, Ashridge Park, Berkhamsted. This was one of the features of the Show, the whole being light, bright, and graceful. Second Mr. Higgins. Table plants was well and largely shown; for twelve Mr. Low was first with a good assortment. Fruit and vegetables was staged in quantity. For a collection of fruit Mr. Folkes, gardener to J. F. Halsey, Esq., M.P., was first with good black and white Grapes, Pears, Apples, a very fine dish of Late Duke Plums, and a Melon. Second Mr. Cameron, gardener to Hon. W. Ryder, Westbrook. Mr. Folkes was first with three bunches of Grapes. Second Mr. Tarbox, gardener to Lady S. Spencer, Berkhamsted. For a collection of twelve distinct dishes of vegetables Mr. Folkes was again first, being closely pressed by Mr. Exler, gardener to — Oxenden, Esq., Bovingdon House.

CUCKFIELD.

The Cuckfield Chrysanthemum Society held their second successful show in the Talbot Assembly Rooms on the 20th and 21st inst., and was fairly well patronised by the ladies and gentlemen in the neighbourhood, and during the evening the rooms were crowded. The entries were not quite so numerous as last year, but the quality, with few exceptions, was very good. The groups were seven in number, and were very creditable, five of the seven exhibitors making an effort at a better finish, so defective in those of last year. The premier award was given to Mr. H. Scutt, gardener to S. W. Erle, Esq., Mill Hall, with fresh well bloomed plants. Mr. J. Umpleby, gardener to H. Woodcock, Esq., Bolnore, Haywards Heath, was a very close second, with plants of superior growth, but the arrangement was a little too stiff to show them to advantage. Mr. A. Hillman, gardener too Mrs. Latham, Knowle, was third. Mr. Geo. Stringer, gardener to R. A. Bevan, Esq., Horsgate, fourth, and Mr. J. Mitchell, gardener to Mrs. Maberly, Mytten, was fifth with dwarf plants neatly arranged and well finished in front. Specimen plants were not numerous, Messrs. H. Scutt, J. Mitchell, and A. Hillman being the successful exhibitors. There was good competition in the class for six Primulus, Mr. R. Inglis, gardener to T. T. Cunliffe-Lister, Esq., Borde Hill, taking the first prize, and Mr. W. Manton, gardener to Mrs. Clifford Barrer, Pickwell Lodge, Bolney, the second prize. For six Cyclamens, Mr. T. Feist, gardener to F. M. Huth, Esq., Henmead Hall, was an easy first with good plants of a first-class strain.

Some local exhibitors have made a decided advance in growing cut blooms. Twelve incurved, Mr. T. Roberts, gardener to R. C. Nichols, Esq., Highby Manor, Balcombe, was first with large blooms of good substance. Back row—Jeanne d'Arc, Novelty, Mr. H. Morgan, Venus. Middle row—Lady Slade, Golden Empress, Mrs. Heale, John Salter. Front row—White Venus, Barbara, Eve, and Mabel Ward. Mr. J. Lingley, gardener to T. W. Best, Esq., Harvest Hill, was a good second. For twelve Japanese Mr. J. Lingley was first with the following, all very good :—Back row—Fair Maid of Guernsey, Madame C. Audiguier, Boule d'Or, Belle Paule. Middle row—Peter the Great, Meg Merrilies, Striatum, Baronne de Prailly. Front row—Val d'Andorre, Hiver Fleuri, Thunberg, M. Astorg. Mr. Roberts was second in this class. For twelve reflexed Mr. Roberts was first and Mr. Manton second, both showing well. There were only three entries for twenty-four blooms, half incurved and half Japanese, open to exhibitors within a radius of six miles, but those staged were of very good quality. Mr. T. Venn, gardener to W. Sturday, Esq, Paxhill, Lindfield, was first with fine large deep blooms. Incurved :—Back row—Jeanne d'Arc, Alfred Salter, Bronze Queen, and Golden Empress. Middle row—Emily Dale, Queen of England, Lord Alcester, and Princess of Wales. Front row—Jardin des Plantes, Cherub, Golden Queen of England, and Barbara. Japanese :—Back row—Mdlle. Laeroix, E. Molyneux, Madame C. Audiguier, Fair Maid of Guernsey. Middle row—Marguerite Marroueh, Maiden's Blush, Val d'Andorre, and M. Bernard. Front row—Japonais, Hiver Fleuri, Peter the Great, and M. Astorg. Mr. F. Godby, gardener to Dr. Withers Moore, The Oaks, Burgess Hill, was second, and Mr. Roberts third. There was a spirited competition for a prize given for the best arranged vases of Chrysanthemums, open to the wives of members, amateurs, and cottagers. Mrs. J. Tugwell, Mrs. W. Sanders, and Mrs. Walter Ede won the prizes in the order named.

In the fruit classes for black Grapes, Mr. R. Inglis was first with Alicantes, Mr. T. Feist second with good Gros Colman. Mr. T. Roberts third with heavy Alicantes. Pears were but few, Mr. Stringer was first with splendid samples of Pitmaston Duchesse and Marie Louise. He was also first for four dishes of Apples with fine clean fruit of Worcester Pearmain, King of Pippins, Warner's King, and Ecklinville. Messrs. J. Lingley, H. Scutt, and W. Manton followed in the order named. Mr. J. Lingley had undoubtedly the best dish in the room, Warner's King of remarkable size. The trays of vegetables were good, Mr. W. Manton carrying off the premier prize in his usual style, Mr. Stringer being a good second. There were several exhibits not for competition, the most conspicuous being a remarkably clean, even, and well coloured collection of twenty-four dishes of Apples and Pears, shown by Mr. Geo. Stringer, and they are a striking example of what can be done by a good cultivator on a very stiff Sussex clay, even in an adverse season. The arrangement of the exhibits was ably superintended by Mr. Umpleby.

LIVERPOOL.—November 20th and 21st.

The autumn Exhibition of this Society was held under equally unfavourable conditions as regards the weather as the spring and summer exhibitions. The Exhibition was held as usual in St. George's Hall, and was an excellent one and equalling those of previous years.

Cut blooms were as numerous as ever, but the quality was not quite up to the standard of excellence. The chief interest centred in the class for forty-eight blooms, thirty-six varieties, and not more than two blooms of any one variety, twenty-four to be incurved and the same number of Japanese. Five competitors staged blooms in this class, and the 10 guinea silver cup was deservedly awarded to Mr. J. Jellico, gardener to F. F. Gossage, Esq., Camp Hill, Woolton, who was thirty-three points ahead of Mr. F. Roberts, gardener to Mrs. W. D. Holt, Sandsfield Park, West Derby, who was also second, and Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, third with smaller, but neat flowers. The cup collection contained the following :—Incurved, back row—Queen of England, Lord Wolseley, Queen of England, Empress of India, Lord Wolseley, Lord Alcester, Alfred Salter, and Empress of India, Middle row—Prince Alfred, Golden Empress, Emily Dale, Prince Alfred, White Venus, Princess of Wales, Mrs. Heale, and John Salter. Front row—Alfred Salter, John Salter, Mrs. Shipman, Mr. Bunn, Princess Beatrice, White Beverley, Bronze Jardin des Plantes,

and Lady Hardinge. Japanese, back row—Boule d'Or, Belle Paule, Val d'Andorre, Ralph Brocklebank, Meg Merrilies, Val d'Andorre, Stanstead White, and Boule d'Or. Middle row—Avalanche, E. Molyneux, M. Tarin, Avalanche, Jeanne Délaux, Golden Meg Merrilies, Mdlle. Paule Dutour, and E. Molyneux. Front row—Criterion, Elaine, Golden Dragon, Madame J. Laing, M. J. M. Pigny, Madame Baco, Stanstead White, and Charlotte de Monteabrier. For twenty-four incurved blooms, distinct, only two competitors staged blooms. Mr. G. Burden, gardener to G. Cockburn, Esq., was placed first, and Mr. D. Forbes, gardener to A. Holt, Esq., Crofton, Aigburth, second. The varieties in the first stand were :—Back row—Lord Alcester, John Salter, Empress of India, Alfred Salter, Emily Dale, Beauty, Golden Empress, and Queen of England. Middle row—Lord Wolseley, Mrs. Heale, Jardin des Plantes, Princess of Wales, Hero of Stoke Newington, Jeanne d'Arc, and Princess of Teck. Front row—Princess Beatrice, Charles Gibson, Nil Desperandum, Sir Stafford Carey, Mr. Bunn, Refulgens, Mrs. N. Davis, and Lady Hardinge. In the corresponding class for twenty-four Japanese the same exhibitor was again first with even bright coloured flowers. Of back row Golden Dragon, E. Molyneux, Madame C. Audiguier, Fair Maid of Guernsey, Criterion, Meg Merrilies, Marguerite Marrouch, and Boule d'Or. Middle row—Madame J. Laing, Pelican, Val d'Andorre, Ralph Brocklebank, Belle Paule, Jeane Délaux, Madame J. M. Pigny, and M. Tarin. Front row—Elaine, Thunberg, Florence Percy, J. Laing, Martha Harding, Madame de Sevin, Soleil Levant, and Mrs. Cannell. Mr. J. Jellico was second, and Mr. R. Foster, gardener to H. Thompson, Esq., Thingwall Hall, Broad Green, third. For eighteen incurved, and the same number of Japanese, Mr. C. Osborne, gardener to H. J. Robinson, Esq., Aymestry Court, Woolton, was successful in both classes. Seven boxes were staged in the class for twelve incurved, and Mr. G. Butler, gardener to Thos. Drysdale, Esq., Moreus House, Mossley Hill, was well first. Mr. A. R. Cox and Mr. T. Foster, Green Bank, were second and third respectively. For twelve Japanese Mr. G. Butler was first amongst six competitors, and staged good flowers.

Both trained and untrained plants were shown in better condition than has been the case for two or three years past, the latter being far in advance of any previously staged. For four large flowered trained plants Mr. J. Hughes, gardener to H. Melver, Esq., was first with large fresh specimens, carrying very perfect blooms of John Salter, Jardin des Plantes, Mrs. G. Rundle, and Lady Hardinge. Mr. J. Harrison, gardener to Mrs. W. G. Bateson, New Heys, Allerton, was second with capital plants. For one plant the last-named exhibitor was first, and Mr. J. Hughes second. For four trained Pompons Mr. Harrison took the lead with grand examples of White Cedo Nulli, St. Michael, Marroon Model, and Lilac Cedo Nulli ; Mr. J. Hughes and Mr. W. Bustard, gardener to J. Lewis, Esq., were second and third. For one Pompon Mr. J. Hughes was first. For one standard Mr. Harrison was first, and Mr. J. Hughes for one pyramid. For a group of plants Mr. J. Warrington was first, and Mr. H. Stone, gardener to H. Bennett, Esq., Weston House, second.

Stove and greenhouse plants were in some cases better than they have been on past occasions. For six the chief prizes were secured by Mr. A. R. Cox, Mr. Jellico, Mr. W. Bustard, Mr. T. Jones, gardener to W. C. Clark, Esq., Orleans House ; Mr. T. Gowen, gardener to R. Brocklehurst, Esq.; Mr. J. Hurst, gardener to W. B. Bowring, Esq ; Mr. A. R. Smith, gardener to D. de Yharrondo, and Mr. C. Evans, gardener to W. Maxwell, Esq., Holmfield.

The display of Orchids was a slight improvement both in the quality and quantity of the exhibits. The prizes offered in the four classes were well contested, and the most successful exhibitors were Mr. C. Osborne ; Mr. J. Edwards, gardener to H. Tate, Esq., Allerton Beeches ; Mr. A. R. Smith ; Mr. J. Madsley, gardener to W. C. Atkinson, Esq.; Mr. W. Wilson ; Mr. J. Edward ; Mr. J. McGrath, gardener to R. R. Heap, Esq., West Derby, and Mr. J. Bounds, gardener to A. L. Jones, Esq.

FRUIT.—The display of fruit was one of the best at any exhibition this autumn. No less than twenty classes were devoted to fruit, and every one of them was well filled. For twelve dishes, distinct, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, won leading honours with good Queen and Smooth Cayenne Pines, excellent Muscat of Alexandria, Gros Colman, Golden Queen, and Alicante Grapes, Coe's Golden Drop Plums, a good Melon, Marie Louise and Pitmaston Duchesse Pears very fine, Blenheim Pippin and King of the Pippins Apples. Mr. J. Bennett, gardener to the Hon. C. H. Wynne, North Wales, was a close second ; and Mr. J. Wallis, gardener to Ralph Sneyd, Esq., Keele Hall, third. For six dishes three collections were staged. Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., took the lead with remarkably fine Alicante and Golden Queen Grapes, Marie Louise and Louise Bonne de Jersey Pears, Best of All Melon, and Cox's Orange Pippin Apples ; second, Mr. J. Bounds ; third, Mr. E. Gregg, gardener to W. O. N. Shaw, Esq., Arrow Park, Birkenhead. Pines were large, and all the exhibits were of the first quality. For two fruits Mr. M. Geeson, gardener to the Duke of Newcastle, Clumber, Worksop, first ; Mr. J. Elsworthy second ; and Mr. G. Gibson, gardener to Mrs. Banks, Wigan, third. For one fruit the same exhibitor was again first, Mr. J. Bennett second, and Mr. G. Gibson third, the first prize fruit being particularly large.

For two bunches of black Grapes (Muscat flavour) no less than eight competitors staged against three last year. Mr. J. Ferguson, gardener to Mrs. Patterson, Rock Ferry, was first with Mrs. Pince in superb condition, Mr. J. Hollingsworth, gardener to J. F Cambell, Esq., second, and Mr. A. Collins, gardener to S. Smith, Esq., M.P., Princess Park, third, both staging the same variety. For two bunches of Alicante no less than fifteen lots were staged, and every one worthy of a prize. The post of honour was gained by Mr. T. Elsworthy with faultless examples, and the same may be said of those staged by Mr. Goodacre for the second award. Mr. J. Downham, gardener to E. H. Harrison, Esq., Eastham, third. For two bunches of black Grapes (any variety) fifteen exhibitors again staged. Mr. J. Ferguson was again ahead with large splendidly finished bunches of Gros Guillaume ; Mr. A. Collins second with the same variety, and Mr. Goodacre third with Gros Colman, well coloured and very large berries. Some splendid Grapes had to be passed over in this class. For two bunches of Muscat of Alexandria Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, St. Helens, was first amongst nine exhibits. Er. D. Lindsay, gardener to Sir Thos. Edwardes Moss, Bart., Otterspool, second, and T. H. Rathbone, Esq., Alton Towers, Stoke-on-Trent, third. The first prize bunches were as near perfection as any we have seen staged. For two bunches any other white, Mr. A. Collins was first with Golden Queen; Mr. D Lindsay and Mr. Elsworthy second and third respectively with the same kind. Eight lots were staged. For four bunches Mr. J. H. Goodacre took the lead with good examples of Lady Downe's, Alicante, Mrs. Pearson and Muscat of Alexandria ; Mr. G. Middleton second, and Mr. J. Hollingsworth third. Six collections being staged. The Grapes throughout were decidedly more numerous and of much better appearance than we have ever before seen at this Society's Exhibition. Pears were not of average quality, and except the first and second collections in the class for eight dishes they need no particular comment, the classes were even better filled than usual. For eight dishes Mr. Goodacre was first with grand Beurré Diel, Beurré Boussoch, Beurré Bachelier, Louise Bonne de Jersey, Pitmaston Duchesse, Marie Louise, Beurré Hardy, and Duchesse d'Angoulême. Mr. W. Mease, Wyncote, Allerton, was second. For four dishes Mr. J. Kelly was first. For one dish Mr. Mease was first with Marie Louise. For six dishes of dessert Apples Mr. Goodacre was first with Nonesuch, Blenheim Pippin, Ribston Pippin, Astrachan, Cox's Pomona, and King of the Pippins. Mr. J. Davies, gardener to Rev. H. Arkwright, Bodenham, was second ; and Mr. A. Williams, The Lawn, Bodenham, third. For three dishes, Mr. J. Bounds was well first amongst eleven competitors. For eight dishes culinary varieties, Mr. T. Davis was well first with very large fruit of Annie Elizabeth, Warner's King, Peasgood's Nonesuch, Ecklinville, New Hawthornden, Alfriston and Emperor Alexander. Mr. A. Williams second, and Mr. Goodacre third. For four dishes Mr. R. Pinnington, gardener to E. Banner, Esq. was first.

Miscellaneous exhibits as usual were numerous and well worthy of notice, but we regret to say that the pressure on our columns compels us to pass over what added materially to the attractions of perhaps the finest Exhibition of the year.

LEEDS.—NOV. 20TH AND 21ST.

A SUCCESSFUL Exhibition was held on the dates named in the Leeds Town Hall. The severe frosts had reduced the number of specimen plants and groups, although sufficient were staged to make a creditable display. Cut blooms were contributed in good numbers and of average quality for the season. The Exhibition was opened by the Mayor, and it is to be hoped that the Society, which has had a chequered career, will on this occasion recoup itself financially, as the Committee have striven hard to make the shows a success. On this occasion the duties of Secretary were efficiently carried out by Mr. J. H. Clark ; the staging arrangements were attended to efficiently by Mr. P. Featherstone, Chairman of Committee.

Cut blooms formed the most important part of the Exhibition, therefore merit notice first. The principal class was that for thirty-six distinct varieties, half to be Japanese and half incurved. Mr. T. B. Morton, Mowden Bridge Nurseries, Darlington, Durham, was easily first, his Japanese being heavy, well arranged, while the incurved were of good size but a trifle rough. The names were :—Japanese—Etoile de Lyon, Mdlle. Laeroix, Belle Paule, Gloriosum, Mdlle. Paule Dutour, Ralph Brocklebank, Holborn Beauty, La Triomphante, Boule d'Or, Mr. H. Weliam, Criterion, Val d'Andorre, Stanstead White, M. Baco, Mdlle. Louise Leroy, Edwin Molyneux, Avalanche, Meg Merrilies. Incurved—Queen of England, John Salter, Lord Alcester, Princess of Wales, Golden Queen of England, Empress of India, Lord Wolseley, Golden Empress, Jeanne d'Are, Prince Alfred, Refulgens, Beverley, Sir Stafford Carey, Mr. Bunn, Mrs. Heale. Mr. Midgley, gardener to H. Mason, Esq., Bankside, Bingley, was second, and had smaller flowers throughout. Third, Mr. H. Featherstone, Kirkstall, Leeds. For twenty-four distinct varieties, half incurved and half Japanese, there was only one entry, the first honours being awarded to Mr. T. Barclay, gardener to R. Clough, Esq., Keighley, the varieties being :—Japanese—Mdlle. Laeroix, La Triomphante, Boule d'Or, Val d'Andorre, Criterion, Ralph Brocklebank, Baronne de Prailly, Madame C. Audiguier, Elaine, Sarah Owen, Jeanne Délaux, M. Freeman. Incurved—Nil Desperandum, Queen of England, Mr. Bunn, Empress of India, Beverley, Jeanne d'Are, Refulgens, Lord Alcester, Prince of Wales, Princess of Wales, Mrs. W. Shipman, and Lord Wolseley. For twelve Japanese, distinct, Mr. Morton was first with a good stand of blooms, showing Etoile de Lyon, Belle Paule, Gloriosum, Edwin Molyneux, Le Sceptre Toulousain, Fair Maid of Guernsey, Mdlle. Laeroix, Amy Furze, Meg Merrilies, Marguerite Marrouch, Ralph Brocklebank, and Stanstead White. Mr. Midgley second with smaller blooms.

Mr. Morton again took first honours for twelve incurved with medium-fresh blooms of Queen of England, Golden Queen of England, Salter, Jeanne d'Are, John Salter, Empress of India, Princess of Lord Alcester, Golden Beverley, Lord Wolseley, Beverley, and

Mr. Bunn. Second, Mr. Barclay, with smaller blooms. Mr. Morton and Mr. Midgley again occupied first and second places for three Japanese, three incurved, three reflexed, and three large-flowered Anemones, both staging well. Mr. Morton staged the best Anemone-flowered in six distinct varieties. A special class was made by members of the Leeds Paxton Society for eighteen blooms, large-flowered distinct varieties. Mr. W. Grix, gardener to Sir James Kitson, Gledhow Hall, Leeds, was first with a good stand. Mr. W. Dury, gardener to Alderman Tyas, Barnsley, was second.

For a group of Chrysanthemums interspersed with foliage plants, space not to exceed 150 square feet, Mr. H. Featherstone occupied premier position with plants carrying large blossoms, well arranged, if we except the front, which exposed the pots rather too freely. The same exhibitor also occupied first place for a group composed exclusively of Chrysanthemums, except a front border of foliage plants, in 100 square feet, with freely flowered plants. For twelve specimens, six to be Japanese and six incurved, Mr. J. Eastwood, gardener to Mrs. Tetley, Leeds, was first with upright-trained plants with fairly good blooms, Mr. Featherstone second. The last-named was the principal prizetaker in other classes for plants of reflexed, Anemone Pompon, and single varieties with fairly good plants, as also was he first for six ornamental fine-foliage plants, bouquets, ladies' spray flowers, buttonhole bouquets, &c. Mr. Midgley took first prize for both black and white Grapes, two bunches each, with capital Muscat of Alexandria and Alicante, both well coloured. Much interest was centred in the dessert table, 8 feet by 4 feet, Chrysanthemums only, with any kind of foliage to be used. Mrs. Rothery, Harrogate, was first with rather a heavy arrangement; Miss Battle, Moortown, second.

A first-class certificate was awarded to Mr. F. R. Hayes, gardener to J. E. Haggas, Esq., Keighley, for Chrysanthemum Miss M. A. Haggas, a pale yellow sport from Mrs. Heale, which retains the excellent qualities of its parent.

LINCOLN.—November 20th and 21st.

The sixth annual Exhibition was held in the Corn Exchange on the above dates, and the exhibits in all cases except specimen plants was superior to any in previous years. The Committee and Secretary (Mr. Pennell, jun., are to be congratulated on the success of their efforts to make an Exhibition worthy of the city of Lincoln. The competition was exceeding close in the cut flower classes, groups of miscellaneous plants arranged for effect, dinner table decorations, and black Grapes. The spirit of emulation has been well developed at Lincoln, and the Society has amply justified its existence by having been the direct means of promoting a higher standard of culture of the queen of autumn flowers, and the development of a more artistic taste in the arrangement of plants in groups or otherwise by the leading gardeners of the neighbourhood. Lincoln this year has probably been unrivalled in the excellency of its groups, whether in competition or not for competition, and to Messrs. Herring, Mitchell, Wipf, Coulling, and Pennell & Sons belong the honour, the three latter contributing groups not for competition. The contest for the premier position in the prize list was between Mr. Herring and Mr. Mitchell, the former being adjudged the victor, but Mr. Mitchell was a very close second.

Miss Pennell maintained her usual position with dinner table decorations, and was placed equal first for an elegant arrangement in green and crimson, and Mr. C. Foster had a bright, graceful, pleasing arrangement, differing in character from Miss Pennell's, but equally good.

Black Grapes were well represented in all respects. Mr. Wipf led with moderate sized bunches and berries of Gros Maroc perfect in every respect, and Mr. Hare was a close second with excellent Alicante.

The following were the principal prizetakers:—Groups of Chrysanthemums and miscellaneous plants arranged for effect, first, A. Shuttleworth, Esq. (gardener, Mr. Herring); second, W. J. Warrener, Esq. (gardener, Mr. Mitchel); third, A. S. Leslie Melville, Esq. (gardener, Mr. Picker). Group of Chrysanthemums and foliage plants arranged for effect, first, T. C. Bourne, Esq.; second, T. Bell, Esq. (gardener, Mr. Dowman). Cut blooms, open to Lincolnshire and Nottinghamshire, twenty-four incurved, in eighteen distinct varieties, first, A. Shuttleworth, Esq.; second, W. J. Warrener, Esq.; third, Mrs. Oldman (gardener, Mr. Gill). Twenty-four Japanese, in not less than eighteen distinct varieties, first, A. Shuttleworth, Esq.; second, Mrs. Oldman; third, W. J. Warrener, Esq. Eighteen blooms, six incurved, six Japanese, and six reflexed, first, T. C. Bourne, Esq. (gardener, Mr. Brown); second, Mr. E. Beevers; third, T. Bell, Esq. In other cut bloom classes the chief prizes were won by Messrs. J. J. Burtt, C. E. Marfleet, A. Shuttleworth, and Mrs. Oldman.

YEOVIL.—November 21st.

This Show, which was allowed to lapse last year, was held in the Town Hall, under, it may be said, new management, on the above date, and the Committee and courteous Hon. Secretary (Mr. W. B. Milborne) deserve great credit for coming forward to prevent the Yeovil Chrysanthemum, Fruit and Flower Show Society becoming a thing of the past, and they are to be congratulated upon the success and excellence of the Show resulting from their labours, and the support extended to them by the citizens of the town and the district.

Seven capital groups were arranged, two composed of Chrysanthemums, the remainder being made up of miscellaneous plants. Mr. Crossman, gardener to J. Brutton, Esq., was first in the former class, and Mr. S. Kidley, gardener to H. A. Helyer, Esq., Coker Court, Yeovil, occupied a like position in the latter class. The plants staged in the several classes provided for Chrysanthemums call for no special remark further than saying there is plenty of room for improvement in their culture. Table plants were well shown by Mr. Channon, gardener to Mrs. Harbin, Newton House, Yeovil; Mr. Lloyd, gardener to Vincent Stuckey, Esq., Langport; and Mr. C. Bowers, gardener to T. Holford, Esq., Castle Hill, Cerne. Mr. C. Anthony, gardener to T. Moore, Esq., Yeovil, had the best six Primulas, showing large well flowered plants of the old Double White in fine condition.

Although the competition in the cut bloom classes was not so keen as might have been expected, owing no doubt to the Bristol Show being held the same day, the quality of the exhibits in the winning stands was excellent. Mr. C. Lucas, gardener to John Marshall, Esq., Taunton, was a capital first for a stand of twenty-four blooms, distinct, with Japanese Baronne de Prailly, Criterion, Mrs. J. Wright, Ralph Brocklebank, Comte de Germiny, Duchess of Albany, Fair Maid of Guernsey, M. Elliott, Boule d'Or, Madame C. Audiguier, Japonais; incurved, Empress of India, Prince of Wales, Mrs. Norman Davis, Jeanne d'Arc, Golden Empress, Bronze Queen, Queen of England, Princess of Wales, Lord Wolseley, Jardin des Plantes, Emily Dale, and Lord Alcester. The flowers throughout this stand were large, solid, even, and fresh. The same exhibitor had the best stand of twelve reflexed blooms. Mr. W. Cocks, gardener to W. Fitzherbert Wyndham, Esq., Kingswear, South Devon, had the best stands of six Japanese and six incurved.

There was a good display of fruit, and the quality generally was good. There were only two collections of six kinds staged. Mr. Lloyd was a good first, showing Black Alicante and Trebbiano Grapes, Glou Morçeau Pear, Ribston Pippin Apples, Nottingham Medlars, and Vicomtesse Hericart de Thury Strawberry. Mr. Crossman, gardener to J. Brutton Esq., was second. Mr. Lloyd was also first for two bunches of Alicante, showing large and fairly well coloured bunches, first for two bunches of any other black with good bunches of Mrs. Pince of fairly good colour. Mr. G. R. Daley, gardener to R. Stainer Randle, Esq., Maperton House, Wincanton, was first for two bunches of Foster's Seedling, in the any other white Grape class, and Mr. Crossman was first for white Muscats. Mr. Hobby, gardener to the Hon. Sir Ponsonby Fane, Brympton House, Yeovil, showed two neat well coloured bunches of Black Hamburgh in the any other black than Alicante class, which secured for him second prize. Pears and Apples were shown well by Mr. Lloyd and Mr. Daley.

Mr. Scott of Yeovil and Messrs. Veitch & Son of Exeter staged two meritorious collections of Apples, not for competition, the former consisting of sixty-two dishes, and the latter forty-eight dishes.

Vegetables were shown well. There were four collections of eight kinds, and three collections of six kinds of salading, capitally set up. Mr. Bowers was first in both classes with capital produce, the Leeks, Onions (Rousham Park Hero), Sutton's Eclipse Cauliflower, Intermediate Carrot, Golden Gem Turnip, and Sutton's Seedling Potatoes being his best dishes.

CROYDON.—November 21st.

The newly constituted borough of Croydon Chrysanthemum Society held their first Exhibition at the Skating Rink Hall on Wednesday last, which was opened by the Mayor of Croydon. The Old Croydon Horticultural Society this year decided for one of the best of reasons, want of funds, to discontinue their annual Chrysanthemum Show, and a goodly number of gardeners and lovers of the Autumn Queen in the locality formed the new Society, and if their first Exhibition is any criterion of their future success there is little doubt but what they will hold their own with ease. The Skating Rink was filled with exhibits to the utmost extent—flowers, plants, foliage, fruit, and vegetables were of excellent quality, the arrangements were admirable, and great credit is due to the Hon. Secs., Mr. W. B. Beckett and Mr. G. L. Browning, and the Committee.

In the open class for a group not exceeding 50 square feet, Mr. W. Curd, Lower Addiscombe Road, was first with an exceedingly well arranged group containing blooms of fine quality. Mr. Sewell, of Sydenham Road, Croydon, was second. Mr. King, gardener to P. Crowley, Esq., Waddon House, secured first honours both for twenty-four incurved and twenty-four Japanese blooms. The other prizewinners in the open classes were J. Brown, Reigate; T. Pannell, C. Symmons, F. Willshire, and J. Rodburn.

The local classes for gardeners and amateurs were well filled. Mr. W. Jupp, gardener to C. Johnson, Esq., was first for twenty-four incurved blooms of good quality, closely followed by C. Welstead, second, and C. Stew, third. For twenty-four Japanese J. Redburn first, and C. Stew second. In the class for six incurved blooms, one variety, Mr. G. Lane led the way with well finished flowers of Lord Alcester. The same exhibitor was first in the class for six Japanese with massive blooms of Madame C. Audiguier. Other prizewinners in these classes were W. Jupp, C. Evans, and W. Tomlinson. The open amateur and single-handed gardeners' classes made a fine display both of blooms and vegetables, and amongst the prizewinners were Messrs. J. Staines, Jones, C. Welstead, C. Perratt, and J. Wood and H. W. Davis. For three dishes of Pears those exhibited by the Rev. W. Wilks were very fine and also first, Mr. H. W. Davis second, and Mr. C. Perrett third. The lady subscribers contributed some handsome centrepieces for tables, amongst them being Mrs. Fewell, Miss Burnham, and Mrs. Beckett.

Amongst the miscellaneous exhibits not for competition were six boards of grand blooms staged by Mr. C. Gibson, gardener to C. Wormald,

Esq., Morden Park, Mitcham. The most conspicuous in his board of Japanese were Ralph Brocklebank, Lady Lawrence and Meg Merrilies. His incurved flowers were of superior quality, and contained Princess Beatrice, Princess of Wales, and Lord Alcester. In his stand of Japanese Anemone an enormous flower of Madame Cabrol was staged. This collection also included two boards of both Anemone and reflexed Pompons. Mr. Butcher of Sydenham Road put up a very attractive group of foliage and Chrysanthemum plants on the platform; some well trained plants were also exhibited by the same grower and awarded a special prize. Messrs. J. Laing of Forest Hill had a good group of Palms and Chrysanthemums, including many of the new varieties; amongst them we noticed Etoile de Lyon and Sarah Owen. Messrs. Bunyard of Maidstone staged a fine collection, 100 dishes of Apples. The exhibit of Messrs. Cannell & Sons of Swanley, which comprised bunches of Chrysanthemums and a fine exhibit of Zonals, were a great attraction to the visitors. Mr. Cheal of Crawley also exhibited a fine collection of fruit, and a very fine and instructive display was contributed by A. H. Smee, Esq., Hackbridge (gardener, Mr. G. Cummins), the most useful varieties for succession being indicated.

RUGBY.—November 21st and 22nd.

The second Show of the Rugby and District Chrysanthemum Society was held in the Town Hall on the above dates, and proved most satisfactory in all respects, the exhibits being numerous, of capital quality, and the attendance of visitors good, The Hon. Secretary, Mr. W. Bryant, assisted by a practical Committee, has already secured an exhibition of considerable interest, and with adequate local support will soon develope into one of still more importance, as it is evident there are plenty of good cultivators in the district.

The cut blooms were notable throughout the principal classes for their neatness, and the competition was extremely close in several classes. This was especially the case in the class for thirty-six blooms, distinct varieties, eighteen incurved and eighteen Japanese, in which there were five competitors, the blooms from three of these being so nearly equal that they had to be most carefully "pointed," with the result that there were only four points difference between them, the first leading by three, and the second was only one point ahead of the third. The first prize (£2 10s.), together with a special prize of equal value contributed by Mr. W. Bryant, was won by Mr. H. Dunkley, gardener to S. Symington, Esq., Brookland House, Market Harborough, who had the following varieties well represented, the incurved and Japanese nearly equal in merit. Incurved: Back row—Queen of England, Guernsey Nugget, Lord Alcester, Golden Empress, Empress Eugénie, and Empress of India. Middle row—Prince Alfred, Princess of Wales, Jardin des Plantes, Cherub, Beverley, and Lord Wolseley. Front row—Jeanne d'Arc, Mr. Brunlees, Venus, Barbara, Baron Beust, and Mabel Ward. Japanese:—Back row; Ralph Brocklebank, Edwin Molyneux, Madame B. Pigny Baronne de Prailly, Japonaise, and Meg Merrilies. Middle row—Mrs. J. Wright, Duchess of Albany, Madame C. Audiguier, Criterion, Belle Paule, and Thunberg. Front row—Boule d'Or, Dr. Macary, Golden Dragon, Elaine, Val d'Andorre, and Fair Maid of Guernsey. Mr. W. Comfort, gardener to G. A. Everitt, Esq, Knowle Hall, was second, his Japanese blooms being much superior to his incurved, which was also the case in the third prize collection from Mr. J. Morris, gardener to Sir R. Moon, Bart., Copswood Grange, Coventry.

With twelve incurved blooms, distinct varieties, there were also five exhibitors, who contributed blooms very close in merit, and the premier honours were again secured by Mr. Dunkley, who had compact solid examples of the following varieties:—Back row—Lord Alcester, Golden Empress, Queen of England. Middle row—Jardin des Plantes, Princess of Wales, Prince Alfred, and Empress of India. Front row—Baron Beust, Mabel Ward, Lord Eversley, and Venus. Messrs. Morris and Comfort followed as second and third respectively. Amongst four competitors in the class for twelve Japanese, Mr. Comfort won the first place with fresh and excellent blooms of Boule d'Or, Comtesse de Beauregarde, Ralph Brocklebank, Madame C. Audiguier. Middle row—Meg Merrilies, Marguerite Marrouch, Madame Baco, and Fair Maid of Guernsey. Front row—Criterion, Mdlle. Lacroix, Madame J. Laing, and Val d'Andorre. Mr. Morris was second, and Mrs. Caldicott, The Lodge, Rugby (gardener, Mr. B. Robinson), was third.

In the classes for groups of Chrysanthemums several admirable contributions were staged, notably those from the Rev. F. D. Moore, Hillmorton Road, Rugby (gardener, Mr. J. Morton), and W. G. Mitchell, Esq., Church Walk, Rugby (gardener, Mr. G. W. Batchelor), who were awarded the premier prizes in two classes. The Rev. J. W. Vacquecray, Hillbrow, Rugby (gardener, Mr. Durbin), and Mr. J. Parker, Rugby, also exhibited well. Fruits, especially Apples and Pears, were well shown, as also were vegetables, the competition being exceedingly keen in all these classes. Mr. G. Goldsmith, gardener to Sir E. G. Loder, Bart., Floore, Weedon, gained leading honours for dessert and kitchen Apples, Pears, and a collection of vegetables with capital specimens in every case, showing good culture.

Several non-competing groups were exhibited, but an extensive and handsome display of plants from Mr. Parker was greatly admired. Mr. Bester also had a neat group.

BIRMINGHAM.—November 21st and 22nd.

The Birmingham and Midland Counties Chrysanthemum Society is not young, but possesses all the vigour of youth, while the ripe experience of its officials enables them to conduct the exhibitions in the most satisfactory manner. The prize cards are the best we have seen, the names of the owners of the exhibits and their gardeners, with the number and description of the classes, being clearly printed on them; not a line is written on the cards, so there can be small excuse for mistakes in transcribing. The class and exhibitor's numbers are on the back of the cards, as is customary at most shows, but at Birmingham the cards have only to be turned over and the awards stamped on, all particulars being then "in print," hence easily read by a moving mass of visitors, a matter of importance in a crowded show where obstruction is often caused by the delay consequent on attempts to decipher hurriedly written names. The Judges' cards are also simple and effective.

Birmingham shows have long been celebrated for specimen plants, and latterly the groups have been of a high order of merit. In these the improvement has been very great, but not more marked than in the cut bloom classes. A few years ago these were comparatively weak, but now they are strong, and it is questionable if finer stands have been seen in competition this year than those of Messrs. Parker and Lindsay, the former, however, distinctly taking the lead; indeed, the cut blooms were the most important feature of the Exhibition, and plants were for once put in the shade, so to say, at Birmingham, a no small feat to achieve, and might, perhaps, not have been accomplished if the specimens of the great grower, Mr. W. H. Dyer, had not been ruined by the early and severe October frost. Do not let it be supposed, however, that there were no plants worth seeing; on the contrary, there was really a rich display in the body of the handsome Town Hall, Mr. E. Cooper, gardener to the Right Hon. Joseph Chamberlain, exhibiting well and taking the chief prizes, a good share of honours also falling to Mr. O. Brazier, gardener to Sir Thomas Martineau, Edgbaston, and Mr. F. Cooper, gardener to C. Showell, Esq. Mr. E. Cooper also secured the first prize with one of the best groups we have seen during the season, Messrs. A. Cryer, gardener to J. A. Renrick, Esq., and J. Walshall, gardener to J. B. Lees, Esq., following. Messrs. Wood & Son's medal for three plants was won by Mr. E. Cooper. And now, through want of space, the plants must be dismissed in order that the blooms in this, the twenty-fourth Show of the Society, may be noticed in the leading open classes.

Primary interest naturally centred in the great class of forty-eight blooms, distinct, half incurved and half Japanese, the prizes offered being £10, £7, £4, and £2. There were four competitors, the first prize falling, as previously indicated, to Mr. R. Parker, gardener to J. Corbett, Esq., M.P., Impney, Droitwich, who has in a very short time won his way into the front rank in the Chrysanthemum world. The incurved blooms were not only well grown but well finished, not large and loose, but of good size and firm, while the Japanese were large, full, and fresh. The varieties were as follows:—Incurved—Back row—Altred Salter, Empress of India, Lord Wolseley, Emily Dale, Queen of England, Golden Empress, Lord Alcester, and Prince Alfred. Middle row—Refulgens, Jeanne d'Arc, Mrs. Heale, Hero of Stoke Newington, John Salter, Princess of Wales, Nil Desperandum, and Jardin des Plantes. Front row—Lord Eversley, Lady Carey, Barbara, Princess of Teck, Charles Gibson, Cherub, Mrs. N. Davis, and Mr. Brunlees. Japanese:—Front row—E. Molyneux, Ralph Brocklebank, Avalanche, Mdme. C. Audiguier, Meg Merrilies, Boule d'Or, Baron de Prailly, and Carew Underwood. Second row—M. J. Pigny, Duchess of Albany, Thunberg, Mrs. H. Cannell, Val d'Andorre, Fair Maid of Guernsey, M. J. Laing, and Mdlle. Lacroix. Front row—J. Délaux, M. Freeman, Marguerite Marrouch, Criterion, Mr. H. Cannell, M. Brunet, Martha Harding, and Comte de Germiny. Mr. D. Lindsay, gardener to Sir T. Edwardes-Moss, Bart., Otterspool, staged remarkably well, but was not quite equal in either section to his successful rival, though he had no great difficulty in winning the second place. Some of his blooms were a little past their best, but very fine indeed were Queen of England, Empress of India, Mrs. Heale, Princess of Wales, Boule d'Or, Criterion, and Belle Paule. Mr. A. Haggart, gardener to Mrs. Foster, Ludlow, followed, the remaining prizetaker being Mr. E. West, gardener to H. Wright, Esq., both having creditable stands of blooms.

Mr. Parker was also well ahead of his rivals in the class of twenty-four blooms, distinct, twelve incurved and the same number of Japanese, staging admirably in the former section Lord Wolseley, Queen of England, Emily Dale, Golden Empress, Lord Alcester, Empress of India, Alfred Salter, Princess of Wales, Mrs. Heale, Princess Teck, Jeanne d'Arc, and Barbara; and in the latter, Ralph Brocklebank, Fair Maid of Guernsey, Boule d'Or, Meg Merrilies, M. Brunet, E. Molyneux, Avalanche, Baron de Prailly, Criterion, M. J. Laing, Mr. H. Cannell, and M. Freeman, Messrs. Walshall and Haggart following in the order named with good examples of culture. Mr. Lindsay won the chief position with eighteen incurved blooms, distinct, with excellent examples of Empress of India, Lord Wolseley, Emily Dale, Prince Alfred, Lord Alcester, Queen of England, John Salter, Mrs. Heale, Princess of Wales, Mr. Bunn, Alfred Salter, Golden Empress, Jardin des Plantes, Princess Beatrice, White Venus, Sir S. Carey, White Bevereley, and Mr. Brunlees. Mr. Haggart was second, his best blooms being Alfred Salter, Lord Wolseley, Lord Alcester and Queen of England, Mr. E. West following very closely with the third prize.

In the open class of twelve Japanese blooms, distinct, Messrs. Parker and Lindsay came into competition again, the former securing the foremost place with a beautiful stand, comprising Meg Merrilies, Boule d'Or, Avalanche, Madame C. Audiguier, J. Délaux, Baronne de Prailly, E. Molyneux, Ralph Brocklebank, Mrs. H. Cannell, Duchess of Albany, Mdlle. Lacroix, and M. J. Laing. Mr. Lindsay was second, and Mr.

T. Lambert, gardener to Lord Harleeh, a very good third. Excellent competition and good stands were observable in the local classes, the chief prizewinners being Messrs. W. H. Dyer, O. Brasier, J. Steeley, and W. Clements.

Primulas are always a great feature at Birmingham, the best display probably to be seen at any show in the kingdom. Messrs. J. B. Thomson, Pope and Son, and E. Cooper were the prizetakers in the open classes, Mr. W. H. Dyer taking the lead in the local gardeners' and amateurs' section. Mr. Chamberlain's Orchids were much admired, as were the plants of Mr. Winn that received the first prize in the class provided for them. Bouquets were numerous and good, Messrs. Perkins and Pope and Sons taking the prizes in the nurserymen's class, and Messrs. Morgan, James, and Fowkes in the gardeners' class, who had to prepare their exhibits in the hall on the morning of the Show.

Fruit was well staged, but we can say that Messrs. Pratt, Goodacre, and Lindsay were the leading prizewinners in the Grape classes, Mr. Gleeson with Pines, and Messrs. Goodacre and Parker with Apples and Pears respectively. Messrs. T. Rivers & Son, Sawbridgeworth, had a fine collection of Apples and Pears, which was granted a certificate of merit. Mr. John Cranston, King's Acre, Hereford, exhibited a good collection of Apples and Pears, containing many good varieties of sterling merit. Messrs. Richard Smith & Co., Worcester, also contributed an extensive collection of fruit, which attracted a considerable amount of attention from visitors.

Amongst miscellaneous exhibits that contributed to the beauty and interest of the Exhibition were Cyclamens from Messrs. Sutton & Sons, Reading, a fine strain, the plants not yet twelve months from the seed pan, being crowded with flowers. Several of the varieties were awarded certificates—namely, Queen of Dwarfs, Delicatum roseum, Marginatum, Vulcan (a grand dark colour), Giant White, and Persicum roseum. Messrs. Hans Niemand & Co. had a beautiful stand of flowers made up into sprays, buttonholes, and other ornaments for personal adornment. In the centre of their stand was a charming basket of flowers for a birthday present, and at the back of the stand a little raised above the rest were four oval mirrors encircled with flowers and foliage to represent the four seasons—spring, summer, autumn, and winter, a novel idea well carried out. The same firm also exhibited a large group of ornamental foliage and flowering plants for decorative purposes. An on-looker remarked he did not think Birmingham would be Birmingham without Mr. Spinks and his decorations. Messrs. Thomson & Sons, Sparkhill, also contributed a fine group of flowers and foliage plants, such as Roman Hyacinths, Poinsettias, Bouvardias, Chrysanthemums, Primulas, &c., tastefully arranged. At the side of their group was an enormous wreath composed of the choicest flowers. The Covent Garden value of this wreath was estimated by an expert at not less than 10 guineas. Messrs. Perkins & Sons of Coventry had a stand of choice floral designs. Messrs. Hewitt & Co., Solihull, also contributed a large wreath of white flowers and an attractive group of plants. Messrs. Pope & Son also showed a similar group, amongst which were some especially fine Zonal Pelargoniums, very bright and cheerful. Mr. Robert Owen, Maidenhead, showed some stands of new Chrysanthemums, including Sunflower, 8 inches in diameter; George McLure, equally large, rosy pink; and a yellow sport from M J. Laing.

It will be perceived from the above sketch that the Show was both great and varied, a credit to the town, society, exhibitors, and officials.

BRISTOL.—November 21st and 22nd.

This was a decided success in every way, and the best Exhibition yet held in Bristol. The Society has been established exactly a quarter of a century, and it is very satisfactory to find that in spite of the numerous societies recently started in the vicinity it is yet able to more than hold its own. Of late years the shows have been held in the Clifton Drill Hall, and this commodious structure was none too large for the display. Mr. F. Wilford Jones is a very efficient Secretary, and the Committee is composed of practical gardeners, but the arrangements were by no means perfect. Some idea will be formed of the extent of the Show when it is stated that there were about four hundred entries sent in by as many as seventy competitors.

A six-guinea cup was offered as the first prize for six trained large flowered varieties, but this failed to attract fresh competitors. It was awarded to Mr. J. Lee, gardener to S. M. Miller Esq., who had neatly trained well flowered specimens. Mr. J. Ayres, gardener to T. M. Gibson, Esq., was a good second. The third prize was won by Mr. M. Cole, gardener to W. F. Tredwell, Esq., Bath, and Mr. A. Ambrose, gardener to G. A. Tilney, Esq., was highly commended. The last named was well first for six Japanese varieties, among these being freely flowered specimens of Fair Maid of Guernsey, Peter the Great, and Mdlle. Melaine Fabre. Standards of large flowered varieties were shown by Mr. M. Cole. The classes for single specimens were not so well filled. Mr. J. Lee was first for four Pompons, and Mr. H. Lewis, gardener to Boddam Castle, Esq., second. Mr. E. T. Hill was the only exhibitor of naturally grown. There were six groups to occupy a space 12 feet by 7 feet in competition, and not a poor one among them. The first prize was awarded to Mr. A. Parkes, gardener to Captain Alcock, who had a fine bank of plants with large fresh blooms in good variety, a row of dwarf plants giving a good finish to the arrangement. Mr. A. Ambroise was second; Mr. W. Coates, gardener to Mrs. Miller, third; and an extra prize was given to Mr. J. Marshall, gardener to J. Doh, Esq., all having very creditable displays.

Miscellaneous plants are much needed in such a large hall, and numerous prizes were offered for them accordingly. Groups to occupy a space 10 feet by 5 feet were shown by six competitors, and a very imposing display was made. Mr. W. Coates was well first, his arrangement being, full, light, and tasteful. Mr. J. Lee was a good second; Mr. J. Goddard, gardener to R. Cripps, Esq., third, and an extra prize was awarded to Mr. A. Parkes. In addition to these Messrs. J. Garaway and Co., Durdham Down Nurseries, Clifton, also had a group of choice flowering and fine-foliaged plants, but not for competition. In other plant classes the prizetakers were Mr. E. Miller, gardener to F. Tagart, Esq., Mr. F. Edwards, gardener to J. Lysaght, Esq., Mr. G. Harris, gardener at the Bristol Zoological Gardens, Mr. A. Hancock, gardener to A. W. Summers, Esq., Mr. J. Lee, Mr. G. Price, gardener to S. Budgett, Esq., Mr. W. H. Bannister, gardener to H. St. Vincent Ames, Esq., Mr. W. J. Cole, gardener to Mrs. Oldland, Mr. J. Shelton, gardener to W. R. Wait, Esq., and Mr. J. Harris, gardener to W. C. Trotman, Esq.

Cut Blooms.—This year no fault could be found with either the value or number of prizes offered for cut blooms, and as a consequence the competition was much better than at any previous show in Bristol. The premier prize, a silver cup value six guineas, was offered for thirty-six blooms large flowered Chrysanthemum, twenty-four incurved in not less than eighteen distinct varieties, and twelve Japanese distinct, and for this there were six competitors. After a careful scrutiny the Judges awarded the first prize to Mr. W. Thomas, gardener to W. Marshall, Esq., Taunton, who was very strong with the Japanese, and had many fine blooms among the incurved varieties. The latter consisted of Mrs. Heale, Empress of India (2), Hero of Stoke Newington, Lord Alcester, Bronze Queen of England, Cherub, Princess Alice, Lord Wolseley, Emily Dale, Empress Eugénie (2), Mrs. Norman Davis, Jeanne d'Arc, Prince Alfred (2), Jardin des Plantes (2), Eve, Refulgence, Antonelli, and Barbara. The Japanese comprised Boule d'Or, W. G. Drover, E. Molyneux, Baronne de Prailly, Meg Merrilies, Thunberg, J. H. Laing, Duchess of Albany, Val d'Andorre, Belle Paule, J. M. Pigny, and Fair Maid of Guernsey. Mr. A. Parkes, who took the second prize, had many fine blooms of incurved varieties, notably of the Queen family, but lost ground with the Japanese. The third prize was awarded to Mr. E. Miller, who had good even blooms, and all the other competitors had very creditable stands of blooms. There were seven entries with twelve incurved varieties, the first prize being well won by Mr. C. Cooper, gardener to C. L. Collard, Esq., Taunton, who had massive blooms of Empress of India, Prince Alfred, Golden Empress, Lord Wolseley, Alfred Salter, Jeanne d'Are, Lord Alcester, Princess of Wales, Refulgence, Jardin des Plantes, Lady Hardinge, and Barbara. Mr. W. Carpenter, gardener to A. Cole, Esq., was a good second, and Mr. W. J. Cole, gardener to Mrs. Oldlands, third. The best six incurved blooms were shown by Mr. A. Parkes. Anemone flowered varieties were not largely shown. For a stand of twelve blooms in not less than six distinct varieties Mr. C. Lucas was well first, having fine blooms of Madame Cabrol, Lady Margaret (2), Fabian de Mediana, Duchess of Edinburgh, Acquisition (2), Georges Sand, Timbale d'Argent, Minnie Chate, Fleur de Marie (2), and Gluck.

Japanese varieties were well shown. The first prize for eighteen distinct varieties was awarded to Mr. C. Cooper, who had fine fresh bloom of Fair Maid of Guernsey, Boule d'Or, Val d'Andorre, E. Molyneux, Baronne de Prailly, Comte de Germiny, Forester, Japonais, Belle Paule, Carew Underwood, Mr. J. Pigny, Maiden's Blush, Thunberg, Madame J. Laing, Madame C. Audiguier, Ralph Brocklebank, and J. Délaux. Mr. W. Thomas was a close second, and G. Runnacles, gardener to C. Thurburn, Esq., Sherborne, third. Mr. Davis was well first for twelve varieties, these consisting of Madame C. Audiguier, E. Molyneux, Baronne de Prailly, Boule d'Or, M. J. Pigny, Belle Paule, Japonaise, Fair Maid of Guernsey, Val d'Andorre, Thunberg, Madame J. Laing, and J. Délaux. Mr. W. Carpenter was second, and Mr. C. Lucas third. Mr. J. Aplin (gardener to W. M. Baker, Esq., Gloucester) was first for six blooms. A prize was offered for six blooms of incurved varieties sent out in 1886, 1887 and 1888, and this was won by Mr. E. Miller, who had Bronze Queen of England and Mrs. Norman Davis fairly good. The same exhibitor was first in a corresponding class for Japanese varieties. The competition with hand bouquets in the open class was very close, a remarkably choice selection of flowers being used in each in each instance.

Fruit.—There was a very marked increase of entries in this section, and a fine display was made. Four competed with a collection of six dishes of fruit. Mr. W. Iggulden, gardener to the Earl of Cork, Frome, was first, being closely followed by Mr. W. Coates, the third prize going to Mr. W. Bannister. There were six entries in the class for Black Hamburgh Grapes, Mr. Bannister was first. A similar number staged Muscat of Alexandria. Mr. W. Coates was first for beautifully finished bunches; Mr. J. Gibson, gardener to Earl Cowley, second; and Mr. J. F. Wilkinson, Gloucester, third. Sixteen competed with Alicante, the lead being taken by Mr. W. Iggulden, who had large well finished bunches, and was closely followed by Mr. E. T. Crocker, gardener to Mr. W. H. Miles; the third prize going to Mr. T. Jones, Bath. Nine entered the class for Lady Downe's, Mr. E. T. Crocker being well first with fine bunches a foot long. The same number competed with Gros Colman. Mr. W. Iggulden was first with massive well-coloured bunches. One exhibitor staged two bunches which together weighed upwards of 11 lbs., but they were not well coloured. Mr. J. F. Wilkinson was first for Mrs. Pince. In the class for any other black variety Mr. E. T. Crocker was first with very good Gros Maroc. A corresponding class was provided for white varieties, and in this Mr. J. T. Wilkinson was first with large well-coloured Raisin de Calabria. Pears and

Apples were numerously shown, and the quality good. Mr. Bannister was most successful with the former, other prizewinners being Messrs. Iggulden, Pragnell, H. Ricketts, and J. Lee. The first prize collection of six varieties of dessert Apples, staged by Messrs. Cranston & Co. were worthy of special mention. These consisted of exceptionally good dishes of Egremont Russet, Gravenstein, King of the Pippins, Cornish Aromatic, Baumann's Reinette, and Ribston Pippin. Messrs. Pragnell, Iggulden, Goddard, Payne, Aplin, and E. T. Hill were also prizewinners in the various classes for Apples. Messrs. Cranston & Co. staged a very good collection of Apples not for competition.

VEGETABLES.—Two classes for collections were provided, and in both the competition was close. The first prize for ten distinct varieties was awarded to Mr. W. Bannister. Mr. W. G. Pragnell had rather finer produce, but not so fresh as those which received the preference. Mr. J. H. Virgo was a good third, and also first in another class, in which Messrs. Sutton & Sons provided the prizes; Mr. Goddard was second, and Mr. E. T. Hill third.

NOTTINGHAM.—NOVEMBER 21ST AND 22ND.

A SHOW of Chrysanthemums, Fruit and Potatoes was held on Wednesday and Thursday, November 21st and 22nd, in the Arboretum Rooms, Nottingham, and in every respect the Show was admitted to be amongst the best the Society has yet held. Although the general public failed to attend, a large number of members and others interested were present. A fairly liberal schedule of prizes was issued, and the entries in the various classes were numerous. Groups of Chrysanthemums with foliage and other plants arranged for effect on space 12 by 8 feet, occupied the ground floor. E. W. Field, Esq., Aspley Hall (gardener, Mr. Wilson), easily obtaining first honour with a beautifully, evenly balanced group of dwarf Chrysanthemums (principally Japanese), carrying brightly coloured flowers intermixed with Palms, Crotons, Pandanus, Dracænas, Cypripediums, and other dwarf plants, Adiantums and the pretty Eulalia japonica forming the groundwork. W. H. Farmer, Esq. (gardener, Mr. Attenboro), was a good second, and Mr. C. J. Mee, Wollaton Hall, secured third honours.

In the class for twelve cut blooms, Japanese, Mr. Wilson was again successful in obtaining first honours with magnificent examples of Coquette de Castile, Soleil Levant, Madame C. Audiguier, Fair Maid of Guernsey, M. H. Elliott, Alfred Chantrier, Jeanne Délaux, Elaine, Madame B. Rendatler, Boule d'Or, Mdlle. Lacroix, and Val d'Andorre. P. L. Mills, Esq., Ruddington Hall, Notts (gardener, Mr. Hesford), was second with good specimens, from which the premier bloom, a grand example of Belle Paule, was selected, Jeanne Délaux and Mdlle. Lacroix also being very fine. Mr. Geo. Taylor, Nottingham, obtained third prize with large blooms, but lacking the freshness seen in the other stands. For six Japanese Mr. Hesford and Mr. Wilson were again successful in the order named. For six Chrysanthemum plants Mr. Wilson was far ahead with well grown plants, and R. E. M. Webb, Esq., Nottingham (gardener, Mr. Collins), second, Mr. Wilson being again first with three plants, and Mr. Collins second. For single specimen plants Messrs. J. R. Pearson & Sons, Chilwell, was first with a grand specimen 6 feet through and by 3 feet high, Mr. Wilson being second.

Fruit was well shown, collections of twelve varieties being keenly competed for. H. R. Clifton, Esq., J.P., Clifton Hall, Notts (gardener, Mr. Anderson), was first, his Gros Colman Grape and Pitmaston Duchess Pears being very good. Mr. C. J. Mee, Wollaton Hall, and C. J. Cox, Esq., Basford (gardener, Mr. Meadows), each showing creditable collections, came next in order. Six dishes dessert and cooking Pears brought out strong competition, as also did a similar number of dishes of dessert and kitchen Apples. Messrs. Attenboro, Meadows, Ince, and Anderson obtained principal honours in these classes. Messrs. Anderson, Booth, and Meadows were the most successful exhibitors of black and white Grapes. Special prizes were offered for collections of vegetables, Messrs. Mee and Dr. Powell being successful. In the classes for Potatoes Mr. Fletcher, Annesley, Notts, obtained the principal prizes, the variety Lord Tennyson being conspicuous in his collection.

The Treasurer, Alfred Page, Esq., the Vice-President, S. Thacker, Esq., and the Chairman of Committee, W. H. Farmer, Esq., each contributed miscellaneous collections of plants not for competition, and the indefatigable Secretary, Mr. E. Steward, assisted by the members of the Committee, superintended the arrangement of the Show.

HULL.—NOVEMBER 22ND AND 23RD.

THE earnest and able officials of the Hull and East Riding Chrysanthemum Society must be congratulated on scoring a distinct success at this their fifth Exhibition. Considering the season the cruel frost in early October that ruined so many plants in the north, and the falling off in the exhibits at some shows, we were agreeably surprised to find the high reputation of Hull as a Chrysanthemum centre so well maintained. Possibly there may not have been quite so many exhibitors as on some previous occasions, and the groups of plants were not so numerous, yet the commodious space was well occupied; and the reduced competition in the plant classes was more than compensated for by the splendid contest in the leading class in the schedule for forty-eight cut blooms, in which the aggregate value of the prizes offered amounted to no less than £47. The challenge vase was, however, generously provided by Lieut.-Col. Gleadow. For these prizes either seven or eight collections were staged, but even taking the lower number it exceeds that of previous shows and represents 336 blooms. Altogether 1851 blooms were exhibited. All the stands were not heavy, for it was apparent that the earlier and larger blooms of several exhibitors were over, and some that were staged had been reduced by the necessary removal of lower fading florets, yet the leading stands were excellent, and the whole creditable to the exhibitors in making the spirited attempt to share in the honours provided. For obvious reasons particulars of some of the classes of general interest can alone be recorded.

In class 1 of forty-eight blooms, twenty-four incurved and twenty-four Japanese, in not less than eighteen varieties respectively, the prizes were—1, A challenge cup, value 15 guineas, and £15; 2, £10; 3, £5; 4, £2. The awards were adjudged in the following order—First Mr. D. Heany, gardener to H. G. Schintz, Esq., Mossley House, Park Avenue, Liverpool; second Mr. J. P. Leadbetter, gardener to A. Wilson, Esq., D.L., Tranby Croft, Hull; third Mr. J. Stevenson, gardener to Col. Pilkington, The Hazels, Prescot, Lancashire; fourth Mr. W. Mitchell, gardener to W. J. Warrener, Esq., The Moorlands, Bracebridge, Lincoln. The first prize blooms were noteworthy by their good, though not extra large size, evenness, and freshness. They were arranged as follows:—Incurved, back row—Lord Alcester, Queen of England, Golden Empress, Queen of England, Empress of India, Alfred Salter, Lord Alcester, and Golden Empress. Middle row—Princess of Wales, Lord Wolseley, Empress of India, Lord Wolseley, Emily Dale, Mrs. Shipman, Princess of Wales, and John Salter. Front row—Prince Alfred, Mr. Bunn, Lady Hardinge, White Venus, Venus, Refulgens, Cherub, and Jardin des Plantes. Japanese, back row—Boule d'Or, Fair Maid of Guernsey, Magame J. Laing, Meg Merrilies, M. Brunet, Gloriosum, M. Tarin, Boule d'Or. Middle row—Madame C. Audiguier, Jeanne Délaux, Criterion, Belle Paule, Elaine, E. Molyneux, Madame J. Laing, and Duke of Berwick. Front row—Gloriosum, Duke of Berwick, M. Freeman, Mdlle. Lacroix, Sarah Owen, Ralph Brocklebank, Elaine, and Criterion. Mr. Leadbetter had some larger blooms in his stands, but some of them were a few days too old, and the "time" did not suit him so well as his successful rival. The other collections followed somewhat closely, the incurved blooms "having it" in one, the Japanese in another stand, but there was no great difficulty in arriving at the average merit of the competing collections.

The next important class was of twenty-four blooms, half incurved, half Japanese, in not less than nine varieties in each section, the Veitch Memorial medal and £5 being offered as the first prize. Very fine stands were placed in competition, the coveted medal being won by Mr. George Lofley, Knighton Church Road, Leicester, with fresh and well finished incurved and very good and bright Japanese, as follows:—Incurved, commencing with the back row and reading from left to right successively—Lord Alcester, Empress of India, Lord Alcester, Queen of England, Lord Alcester, Sir S. Carey, Golden Empress, Lord Wolseley, Mrs. Shipman, Golden Empress, Barhara, and Jardin des Plantes. Japanese—Meg Merrilies, Ralph Brocklebank, Avalanche, Ralph Brocklebank, Mdlle. C. Audiguier, Avalanche, Gloriosum, Madame C. Audiguier, Madame Lacroix, E. Molyneux, M. Brunet, and Val d'Andorre. Mr. T. Heaney was a good second in this class; Mr. G. Appleton, gardener to C. H. Johnson, Esq., Thorgumbald, following somewhat closely with the third prize.

We now come to another challenge cup class—namely, of twenty-four blooms, twelve incurved and twelve Japanese, in not less than six varieties respectively. The cup, value 10 guineas, is provided by the zealous and popular Chairman of the Society, R. Falconer Jameson, Esq., 3 guineas being added by Mr. E. P. Dixon of the Yorkshire Seed Establishment. Mr. Leadbetter won well (now securing the cup) with remarkably fine blooms of—Incurved—Lord Alcester (2), Golden Emperor (2), John Salter (2), Cherub, Mr. Bunn, Nonpareil, Queen of England, Jeanne d'Arc, Barhara; Japanese—Fair Maid of Guernsey, Marguerite Marrouch, Criterion, Gloriosum, Madame J. Laing, Val d'Andorre, Boule d'Or, Meg Merrilies, Elaine, Comtesse de Beauregard, Golden Dragon, and Mr. H. Cannell. F. W. Jameson, Esq., East Ella, Hull, was second in this class, and Mr. J. Walker, gardener to R. Soames, Esq., Waltham Hall, Grimsby, third with highly creditable stands.

In the class for twelve incurved blooms, distinct, Mr. Heany exhibited a fine stand, the varieties consisting of Empress of India, Lord Alcester, Queen of England, Golden Empress, Lord Wolseley, Jeanne d'Arc, John Salter, Jardin des Plantes, Mr. Bunn, Princess Beatrice, and Lady Hardinge. In the corresponding Japanese class Mr. Leadbetter was the most successful exhibitor, staging, in admirable form, Meg Merrilies, M. Tarin, Elaine, La Triomphante, Jeanne Délaux, Criterion, Madame J. Laing, Ralph Brocklebank, Gloriosum, Val d'Andorre, Elaine, M. J. M. Pigny. Mr. F. W. Jameson was the leading exhibitor in a class of seven competitors, with twelve large Anemone varieties, staging good examples of Marguerite Villageoise (2), Fabian de Mediana (2), Emperor (2), Gluck, Lady Margeret, La Marguerite, L'Ami Laytou, Thorpe Junior, and Grande Alvéole. Also, in the corresponding reflexed class, with good blooms of Dr. Sharpe (3), Mdlle. M. Tezier (3), Cullingfordi (2), King of Crimsons (2), Chevalier Domage, and Irene. Space forbids the enumeration of other prizewinners; and in reference to the cut bloom classes it can only be said that the exhibits of local amateurs exceeded in quality those of former years; that Mr. Leadbetter staged the two premier blooms in the Show—Lord Alcester and Meg Merrilies; that Mr. Stanley won the first prize for sweet-scented Chrysanthemums with Progne; that three or four varieties in one stand were all "scented" alike; that Mr. G. E. Smith was awarded a first-class certificate for excellent blooms of "Bronze Mr. Bunn," and that Mr. Morton, of Darlington, staged a large representative collection not for competition and very highly commended.

Plants.—Hull has become famed for handsome groups of Chrysanthemums with foliage plants arranged for effect. With the exception of Mr. Leadbetter's exhibit, which won with comparative ease the challenge cup and £5, they were, for the reason above stated (October frost) not so good as usual. The second prize was adjudged to Mr. H. Taylor, Newland. Mr. G. Cottam, jun., would have been second if he had not spoiled his group by a profusion of obtrusive white stakes, the remaining prize going to Mr. R. Falconer Jameson, who did not appear to have the requisite dwarf plants for finishing the arrangement effectively. Mr. G. Lawson was by far the best exhibitor of plants, his standards being admirable examples of good culture and training.

Mr. E. P. Dixon contributed a valuable miscellaneous assortment of plants which were very highly commended, as did Mr. Cottam. Various other exhibitors also aided in imparting variety to the general display.

Nothing could be more satisfactory than the arrangements throughout, and it is only justice to the Chairman, Hon. Secretaries (Messrs. E. Harland and James Dickson), with the Committe generally, to describe the Show amongst the best conducted in the kingdom. It was attended by upwards of 9000 visitors, and it was estimated that 5000 were present at one time during the evening of the second day.

[Just as we are going to press we learn from the Secretary of the Hull Show that the fourth prize in the large class of forty-eight blooms is withheld on the ground that some of the blooms in the stands were exhibited by J. J. Burtt, Esq., of Welborn, at the Lincoln Show, this gentleman recognising them at Hull. Mr. Burtt and Mr. Mitchell agreed that the whole matter should be referred to Mr. Charles Pennell, sen., of Lincoln, and to abide by his decision. This gentleman, after examining the blooms and hearing evidence on both sides, decided that Mr. Burtt has substantiated his claim to the blooms in dispute.]

PONTEFRACT.—November 23rd and 24th.

Last year a Society was established by a few earnest men to "promote and encourage the cultivation of the Chrysanthemum" in the district surrounding this historic old Yorkshire town. The first Show surpassed the expectations of the Committee, and of the second it may be said that if the exhibits had been more numerous a larger building than the Town Hall would have been requisite for their accommodation, or there would have been little available space for visitors. Not only was the structure quite filled with exhibits, but there was a great advance in the quality of the cut blooms staged, and in some of the classes the competition was very close indeed. Lord and Lady St. Oswald are excellent supporters of the Society, and the Exhibition was opened by his lordship with an appropriate address. The best plants in the Show also came from Nostell, but the able grower of them, Mr. Temple, lost the chief prize through a little defect in the arrangement of his group. The cut blooms, however, demand primary attention.

In the open class of thirty-six blooms, eighteen incurved and the same number of Japanese, in not less than sixteen varieties respectively, Mr. D. Lindsay of Otterspool had no difficulty in winning the first prize of £5, Mr. Morton, Darlington, being a very good second, with Japanese blooms especially, and Mr. W. Pearson, gardener to W. Jackson, Esq., Knottingley, third. The incurved varieties in the winning stands were —Back row—Empress of India (premier), Queen of England, John Salter, Lord Alcester, Queen of England and Empress of India. Middle row—Alfred Salter, Mr. Bunn, Mrs. Heale, Lord Wolseley, Golden Empress, and Prince Alfred. Back row—Princess of Wales, White Venus, Princess Beatrice, White Beverley, Lady Hardinge, and Jardin des Plantes. Japanese—Back row—Madame John Laing (premier), Meg Merrilies, Criterion, Ralph Brocklebank, Fair Maid of Guernsey, and Boule d'Or. Middle row—Boule d'Or, Carew Underwood, M. J. N. Pigny, J. Délaux, Gloriosum, and "Albert de Lion." Front row—Val d'Andorre, M. Astorg, Madame J. Laing, Japonaise, Elaine, and M. John Laing. The stands were very good indeed, and certainly the best that have been seen at Pontefract. In respect to the variety which Mr. Lindsay exhibits under the name of Albert de Lyon, and which has a general resemblance to Elaine, but with longer florets, the lower faintly tinted, is it not the Albert Deleau of the N.C.S. catalogue, and there described as "Silver, rose, and white?" The difficulty in deciphering the names on French and sometimes English labels is well known, and the popular rendering "De Lion" might easily have been deduced from Deleau. It requires a critical eye to distinguish this variety in some of its stages from Elaine, as the "silver rose" is not apparent on the surface; a difference, however, is discernible in the character of the florets. Both at Birmingham and Pontefract some growers did not regard the two varieties named as distinct, but they were allowed by the Judges. This small digression may perhaps be permitted. To resume. Mr. Morton staged in his good stand of Japanese a white variety named Condor, effective by its broad and long strap-shaped florets. Mrs. Beale and Mrs. Langtry, fine blooms of Meg Merrilies and Ralph Brocklebank were also noticeable in collection. Mr. Morton secured the chief prizes with twelve incurved varieties, also with twelve Japanese, the former comprising John Salter, Lord Alcester, Empress of India, Queen of England, Princess of Wales, Baron Beust, Prince Alfred, Golden Empress, Golden Beverley, Barbara, Mr. Bunn, and Lady Hardinge; the latter, Ralph Brocklebank, Belle Paule, E. Molyneux, Meg Merrilies, M. H. Wellem, Boule d'Or, Madame Lacroix, Duchess of Albany, Gloriosum, Florence Percy, Mr. Garnar, and Stanstead White.

A silver cup was offered for twenty-four blooms, half incurved and half Japanese, in not less than six varieties, and not more than two of one variety in each section. The prize was won in a close contest by Mr. Dunn, gardener to Mrs. Jones, Elmsall Lodge, Pontefract, with (incurved) Empress of India (2), Alfred Salter, Queen of England, Lord Alcester (2), Mr. Bunn (2), White Venus (2), Lord Wolseley, and Beauty; (Japanese) Boule d'Or (2), Belle Paule (2), Val d'Andorre (2), Madame C. Audiguier, M. Tarin, Gloriosum, Elaine, Mrs. H. Elliott, and Madame Lacroix. The second prize blooms of Mr. McCleave, gardener to R. H. Jones, Esq., Badsworth Hall, were generally larger, but some of them a week too old, John Salter and M. John Laing being within a shade of winning "premier" positions. Mr. Pearson had the third prize, his stand containing neat and good blooms. There was excellent competition in the other local classes. Mr. C. Ketchell, gardener to C. H. Simpson, Esq., Ackworth, winning many first prizes, while Mr. John Sunley and Messrs. J. & R. Calam were successful with bouquets.

Mr. W. Pearson secured the chief prize for a group of Chrysanthemums, a free and informal arrangement, Mr. Temple having better plants and blooms but staked up too formally for producing a pleasing effect, hence he was placed second, and Mr. Bull, gardener to John Rhodes, Esq., Snydall, third with a free arrangement but blooms too light. Miscellaneous groups of plants were effective, Mr. Ketchell securing the first position, but his plants though good and bright were too formally packed. Mr. Pearson was a dangerously close second, a few weedy-looking Marguerites perhaps losing him the higher position, and Mr. B. Hartley a good third. Excellent Roman Hyacinths were exhibited by Messrs. Ketchell and Moxon, the first-named exhibitor being first with black Grapes, capital examples of Gros Guillaume, Mr. Pearson closely following with Alicante. Mr. D. A. Neilson had the best white Grapes, and Rev. G. Haslam, Brotherton, the best Tomatoes, very fine. Well finished bunches of Golden Queen Grapes exhibited, not for competition, by Mr. Lindsay, were highly commended. A number of good exhibits must be passed, and after indicating the main features of the Show it only remains to say that in Mr. Thomas Glover the Society has a most courteous and industrious Hon. Secretary, and the Committee have given proof by their work that they merit the support of the affluent in developing high culture and producing a floral treat for the inhabitants of the district.

RYDE, ISLE OF WIGHT.

The cultivation of the Chrysanthemum is making headway in the Isle of Wight, the above Exhibition being pronounced far ahead of the previous ones. With such an enthusiast as Mr. James O. Brook at the head of the Committee, and Mr. James Eley as Secretary, much interest is thrown into the work of the Society. Apart from the ordinary classes for cut blooms special prizes were offered for vases, epergnes, bouquets, and baskets of cut Chrysanthemums and foliage, which added to the interest and attractions of the Show. There is also a special prize of a piece of plate, valued 2 guineas, for a stand of triplets with Ferns or foliage in what is known as Cannell's style, which has a very pretty decorative effect. The special prize offered by Mrs. J. O. Brook for a basket of cut berries, autumn foliage, and Ferns brought a competition far ahead of anything seen near the metropolis, the combination of colours being exceedingly attractive and the arrangements elegant and tasteful. Groups of Chrysanthemums did not display much quality, the first prize going to Mr. Taplin, Mr. James second, with Mr. Barnes third.

The style of plants adopted with one exception is the upright half-bush style, fit for conservatory work, the majority measuring from 3 to 5 feet over, and bearing fine heads of bloom of fair average quality. Mr. Wilkins, gardener to W. S. Ridley, Esq., The Castle, St. Helen's, was the chief exhibitor in the plant classes, and the Wood Memorial medal, offered for the best exhibit of Chrysanthemums in the Show, was awarded the six plants of Japanese exhibited by him, amongst which was a fine plant of Madame J. Laing. Mr. A. Tolley, St. Helen's, and Mr. J. Woods of Ryde also exhibited well in the plant classes.

Cut Blooms.—In the open classes for thirty-six cut blooms, eighteen incurved and eighteen Japanese, Messrs. W. & G. Drover was first with a grand lot, showing in their well-known style. The same exhibitor was also first in the class for Anemones, and first for six of any one variety. The chief interest was centred in the contest for the silver challenge cup, offered for twenty-four distinct, Isle of Wight only, to be won twice before being claimed. Last year it was won by Mr. G. Wilkins, but this time it was wrested from him by a stand of good blooms exhibited by Mr. Earle, gardener to Henley Grosse Smith, Esq., The Priory, St. Helen's, of Orchid renown; Mr. Wilkins was second, and Mr. H. Drover, florist, Ventnor, a good third. In the classes for incurved blooms Mr. Earle carried off the honours, and Mr. Wilkins was first with good stands in the Japanese classes, Messrs. J. O. Brooks and J. Woods showing well in the Anemone and reflexed classes. For eighteen triplets shown in Cannell's style Mr. Attrill was first with a stand of excellent quality, effectively arranged, Mr. A. Tolley second, and Mr. J. O. Brook third. For an epergne or vase Miss Shaw was first, Miss Brook a good second, with Mrs. E. Brook third; and for a bouquet Mr. Taplin was first, Mr. W. Jeffery second. For a basket of ornamental foliage and berries previously mentioned Miss L. Belcher secured the first prize, Miss E. Nutt second, and Mrs. C. Prince third, other ladies showing well in a close competition. In the fruit classes Messrs. F. N. Broderick, Taplin, Richards, Martin, and Mr. Alderman Colenutt, the Mayor of Ryde, were the chief prizetakers.

WORK FOR THE WEEK.

FRUIT FORCING.

PINES.—During the next two months it is likely the weather will be sunless with cold nights, which is not at all favourable to vegetation, yet in the cultivation of Pine plants rapid progress at this time of year is not advisable. It is better to rest content with a slow advance being made in a steady uninterrupted manner; hence the temperature should be lowered to its minimum in each department, which for the fruiting house should range from 65° to 70°, successional houses 60° to 65°, and for suckers 55° to 60°, allowing a rise of 5° to 10° from sun heat. The house containing the fruiting plants will need constant attention in sprinkling the pathways and moistening other surfaces in the house as they become dry. In airy houses the plants will need to be lightly syringed at least once if not twice a day. Examine the plants at intervals of not less than a week, and give tepid liquid manure abundantly to those which require it. Plants in fermenting beds do not, as a rule, require nearly so much water as those subjected to the heat arising from hot-water pipes; but, notwithstanding, the plants must be looked over at least once a week. In succession houses and pits, where less heat is applied, a moderate and equable state of moisture should abound, and no more fire heat be employed than is absolutely indispensable, which, with covering over the lights at night, will in a great measure dispense with fire heat, and therefore should be employed whenever practicable. Take care that the plants have the full benefit of light in every division by keeping the glass clean.

VINES.—*Early Vines in Pots.*—Pay attention to fermenting material in pits, which, as every pot is placed on a solid pedestal built from the bottom of the pit, will admit of frequent additions being made as the heat declines, the whole mass being turned without displacing the Vines, and root action will be all the steadier and less liable to be checked when the pots are only partially surrounded by the plunging material. Afford liquid manure whenever moisture is needed in a tepid state, and cease syringing the Vines after the bunches show, when the final disbuding should be made, leaving the most promising with a surplus for contingencies. Stop the growths a couple of joints beyond the show of fruit, laterals below the bunch at the first leaf, and those beyond may be allowed to extend as far as it can be done without crowding the principal foliage. Keep the temperature at 65° to 70° by day, 5° to 10° more from sun heat, and 60° to 65° at night, damping available surfaces two or three times a day.

Early Forced Planted-out Vines.—When the buds in the house that was closed about the middle of November show signs of swelling, give the inside border another supply of water in the case of vigorous young Vines, and liquid manure when they are old and require simulating. This should be applied at a temperature of 80° or 90°, and if not already done some good fermenting leaves and stable litter laid in heaps or ridges on the borders will help the surface roots and give off a genial moisture to the atmosphere, reducing the necessity for hard firing and incessant syringing. Young Vines that have not been forced early will require bending down to a horizontal position to insure an even break down to the base, but old Vines may be tied to the trellis immediately they are pruned, and will usually break freely.

Succession Houses.—Take advantage of unfavourable weather outdoors to get Vines pruned, always bearing in mind that early pruning conduces to a strong and even break when the time arrives for forcing. In dressing the Vines do not remove more than the loose bark, and wash with soap and water in preference to a composition which leaves a thick deposit. Thoroughly cleanse the glass with water, the woodwork with soap and water, and the walls with limewash. Remove the loose surface soil, and give fresh material; lumpy loam with a little charred refuse and steamed bonemeal, or some approved fertiliser, may be similarly employed.

Late Houses.—The attention of growers has frequently been directed to the importance of starting the Vines and helping them forward with fire heat in the spring, as being safer and more economical than trusting to sun heat during the early part of the season and having to employ fire through the autumn to have the wood and fruit ripe, or apparently so, by November. In fine hot seasons it may answer well enough, but in a cold wet season the Vines hold the foliage until it is displaced or liberated by a rapid depression of temperature. This sudden check is not ripening, and the chances are that the Grapes, particularly such varieties as Mrs. Pince and even Lady Downe's, do not retain their colour and freshness until the time arrives for cutting in January; and when Grapes begin to shrivel on the Vines it is useless trying to keep them in the Grape room until May. This is given for the benefit of those who have not hitherto made a start sufficiently early to insure a satisfactory result in autumn. All Grapes intended for keeping fresh and plump for some months after they are cut should now be hanging on leafless Vines that had completed their season's growth and ripening by the end of October. Where Vines are in this condition the Grapes will keep satisfactorily with the temperature falling as low as 40°, with just sufficient fire heat to dispel damp and protect them from frost; but fire heat after the leaves fall must be sparingly applied, particularly to Muscats and thin-skinned varieties that soon begin shrivelling in a warm, dry atmosphere; whilst in a stagnant moist one they are very liable to spot, and when that sets in all further chance of keeping the Grapes is gone. In damp weather, when the external air is charged with moisture, the house should be kept dry, cool, and close, and when the nights are clear and frosty light non-conducting material such as scrim canvas, or even fishing nets drawn over the roof, will prevent the radiation and economise the fire heat, whilst the subdued light is rather beneficial than otherwise to the Grapes, and certainly does no harm to the Vines.

PLANT HOUSES.

Chrysanthemums.—As the flowers fade cut down the plants within a foot or a few inches of the base, and stand them in a light airy structure to induce them to produce strong cuttings. Any plants that have pushed up weak growths from the base should have them removed, so that good cuttings will be produced by the time they are wanted. The plants will need considerably less water, in fact only sufficient to keep the soil in a moderately moist condition. Plants for late flowering that are only just swelling their flower buds will be benefited by weak stimulants or artificial manure applied to the surface of the soil. Keep these as cool as possible by admitting air freely by day as well as at night on all favourable occasions. If aphides attack any of the plants fumigate lightly with tobacco.

Roses.—Tea Roses that are outside with their pots unplunged should have the protection of a cool house or cold frames. All plants required for very early forcing, whether Tea varieties or Hybrid Perpetuals, should be pruned without delay. The unripe ends of such varieties as Gloire de Dijon may now with safety be removed, and the houses they occupy thoroughly cleaned. Keep all as cool as possible that are not required for forcing before the beginning of the year. If red spider or mildew exists upon the old foliage of the plants at pruning time remove the foliage—that is, from those with well-ripened wood that will be forced into bloom. If insect-infested foliage is left upon the plants until they have produced young growth it will soon be attacked, and red spider and mildew may prove a source of annoyance the whole season. From plants that will come naturally into flower the old foliage, if not infested, should not be removed for some weeks.

The Forcing House.—It is a good plan where practicable to set a house apart for the purpose of forcing such plants as the varieties of Azalea indica, with the Ghent and Mollis type, Guelder Roses, Laurustinus, Rhododendrons, Lilacs, and similar plants. The plants start freely, almost naturally, if stood upon a bed of fermenting material. This should be principally composed of leaves that have been stored in a dry state. A little litter may with advantage be added, but this should not be too near the surface so as to interfere with plunging the pots. Be careful not to use too much litter, or a violent heat will be created which will do more harm than good by unduly exciting the plants. All that is needed is a gentle moist heat such as a bed of leaves is capable of yielding. The varieties of Azalea indica should not be plunged, but merely stood on the surface. The other plants will bear plunging without injury. Pot hardy shrubs for forcing, and arrange them with Deutzias, &c., in Peach houses and vineries as they are prepared for starting. The forcing house can then be supplied from these structures. The greatest success attends the forcing of these plants by starting them gently at first.

Bulbs.—Hyacinths, Tulips, and Narcissus, as soon as they are green after removal from the plunging material and display signs of growth, may with advantage be stood amongst hardy shrubs in the forcing house until they display signs of vigorous growth. They must then occupy a position close to the glass to prevent their foliage and flower spikes becoming drawn. Tulips will require brisk heat to bring them forward, and the pans or boxes in which they are grown may be plunged amongst the leaves. Our earliest Tulips are produced by plunging the pans containing them in close propagating frames. A few Amaryllises may be introduced to the forcing house, these may be plunged as soon as the bed is ready for them.

Lily of the Valley.—Early frosts sent these to rest sooner than usual, and imported crowns are coming forward this year very freely. The best way of forcing these early is to lay the crowns closely together in cocoa-nut fibre refuse, covering the crowns an inch or more below the surface. They should be in close frames, where they can enjoy brisk bottom heat. This course is necessary for all that are needed up to the end of the year. After that time they will come forward freely enough in any warm moist structure. Spiræas should be plunged in brisk bottom heat, if the flowers are required as early as possible.

THE BEE-KEEPER.

SIGNS OF THE TIMES.

As we are approaching the close of another year we may take a glance backwards in the annals of bee-keeping—say for thirty years or more—and compare it with the present and last dozen years. In the first named epoch the same principles in the art of bee-husbandry as now practised were then advocated in these pages,

and then (as now) they were carried out to a successful issue. After a while new teachers appeared, who either knew not or entirely ignored the then existing satisfactory state of good bee management. One "idea" after another rose in rapid succession, but to fall as suddenly as they rose. Rational bee management in all its forms was denounced, and interested persons for a time held the sway. This continued for about a dozen years or more, with perhaps more than that number of different kinds of hives, every one of which was an improvement on the one previously launched as the best and eclipsing all others.

The British Bee-keepers' Association's ten-framed standard, with which no other kind of hive was allowed to compete at shows under their auspices, has had its rise and fall. The old Stewartou system of placing an empty raise beneath stocks during winter, as well as that of giving wide entrances, is but being introduced in some quarters, and one writer recently seemed to regard it as new and his own idea. In America many other things we have long taught and practised are just being tried, such as our hiving apparatus, clearing supers of bees (the latter perfected by me with the carbolicised paper years since), then the possibility of transmitting honey in paper packages, is receiving their attention. Several years ago I put this to test, and lately I had samples of honey sent me successfully by post in paper. The above are but a few matters that are being discussed which we have practised for a long time.

It is a trying season such as the past one that tests the bee-keeper and his system of management, and when we find a number of bee-keepers located near each other managing their bees on different principles, one being successful and the other not, it is safe to assume that success was due to hives and management. Within the last month I have received upwards of a score of letters from different localities, all the writers having had a fair average honey harvest of from 40 to 50 lbs. from each hive. Nearly every one of these ascribe their success to information in this Journal.

In future articles I will be guided, as previously, by the state of my own bees, always keeping in mind the difference that exists between the seasons in different parts of the kingdom. Meanwhile, I advise all who contemplate making any change in hives and system of management; to embrace the opportunities that often arise during the winter months, and get all in readiness for the summer of 1889, which, it is to be hoped, will be more lavish in her gifts in the way of sunshine and nectar than 1888 has been.

SUPERS.

As small supers are in greater repute with many bee-keepers than sections, it will please some to learn that these can be had at an outlay of about 7d. per dozen for material. The wood is of two thicknesses. The sides and top bars are one-eighth of an inch, and front and back five-sixteenths of an inch. All should have a slight planing, and the upper edge forming backs and fronts should be rebated. A common three-eighth match plane does this. After a number of lengths are cleaned, rebated, and clamped together, set a compass to the lengths required, mark and square over them, cut to the line, and the pieces are ready for nailing. The bars averaging 1¾ inch broad ought to have a groove in the centre for the foundation. It can be made with a circular saw or a drawer bottom plane. The sides of the supers should be from 4 inches to 4¼ inches broad.

There are no better receptacles for honeycomb than these small supers holding about 5 lbs. each, and they are the cheapest and handiest in every respect, while they are unsurpassed for marketing purposes, and command a ready sale, often too, when sections are a drug on the market.

HOW LONG DO QUEENS CONTINUE LAYING?

"J. B. J." asks, "How long do queens continue to lay?" When a hive is fairly populous, and in a normal condition as to health, &c., the queen of such a hive begins to lay shortly after the shortest day, and continues to do so until the month of September, when, as a rule, queens of a year or more old discontinue to deposit eggs, and the bees naturally cluster up. But if feeding be resorted to, or a change of situation take place, and the hive well filled with honey, breeding will be resumed, and continued until stress of weather puts an end to the flight of the bees. Young queens especially Syrians, will sometimes breed the whole winter. But all varieties seek a time for repose.—A Lanarkshire Bee-keeper.

Erratum.—In the third paragraph, page 479, third line from bottom, "the bottom box first and work upwards," should read, "upper box first and work downwards."

TO CORRESPONDENTS

All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book (*W. C.*).—The work you mention has been long out of print.

Address (*C. O. S.*).—The address you require is Mr. W. Collins, 9, Martinhoe Terrace, Martindale Road, Balham.

Bouvardias Sporting (*J. J. S.*).—These plants are much given to "sporting," and the double varieties possess a similar character. Cuttings of the shoots bearing the flowers differing from the parent may, if rooted, retain their character.

Chrysanthemum Sport (*E. M.*).—The sport seems to be a promising one, but you would do well to place it in the hands of an expert grower for exhibition, who another season would prove whether it is really distinct and valuable.

Buttonhole Holder (*J. R. B.*).—The holder you send is a simple and efficient one, the indiarubber cap preventing the water escaping, and also serving to retain the buttonhole in its place. No doubt, if well advertised as you suggest, it would obtain a ready sale, especially as the price you mention would be a moderate one. Ordinary holders are much used, and it is probable when the improvement was made known the demand would be increased.

Camellia Buds Falling (*O. T. R.*).—Assuming the buds were well set on ripe wood their falling is either the result of defective root action, the consequence of the soil getting too dry occasionally—it may be some weeks ago—or of a sudden change of conditions, such as removing them from a damp house, or from the open air, into a dry structure. You should have stated the conditions under which they have been grown and the treatment to which they have been subjected.

Cinerarias Flowering Prematurely (*Idem*).—When Cinerarias "show flower buds instead of growing" it is certain there has been some mismanagement. The plants may have been crowded too long in the seed pans or pots, have been too dry, placed in a compost not favourable for free root action, been too root-bound before repotting, or in some other way received a check. The mixture you name would have been more than rich enough without the soot, and an excess of this arrests instead of promotes the growth of these and other plants.

Misnamed Vines (*Kiltennan*).—No one can tell you "with certainty" the name of the Grape from one shrivelled berry. You ought to have sent sooner, also have sent samples to the nurseryman who supplied the Vines, and he, being a man of high character, would regret any mistake on the part of his assistants, and doubtless supply other Vines gratuitously if convinced of the mistake. The berry resembles Foster's Seedling, and the leaf also, but the examples are insufficient for positive identification.

Preparing Manure (*Sewage*).—There is nothing so good as dry soil, and the drier and finer it is the better for mixing with the contents of the closet, sufficient soil being used for clean and free incorporation. If you have plenty of powdered charcoal or dry wood ashes, a quantity of either could be used also with great advantage. The mixture would be of great value for top-dressing plants that need assistance, and Vines. It must be used cautiously, however, as it will probably be much stronger

than the native guano of which you speak, but that of course depends on the quantity of soil used in the mixing.

Exhibiting Pompon Chrysanthemums (*J. S.*).— If spikes or bunches are stipulated for in a schedule with no reference to the number of blooms, it is understood that no limitation to three blooms is desired by the authorities of the Shows, and Judges make the awards on the merits of the spikes or bunches, whether each contains three blooms or thrice that number. The most satisfactory way of exhibiting Pompons is in bunches of three flowers, one on each stem, with foliage, the flowers to be not less than 3 inches above the board. If this were clearly stated in schedules all exhibitors would know what to do, and examples of culture would be best represented.

Gardening in America (*H. G.*).—We cannot tell you "to what extent gardening is carried out in the neighbourhood of New York," but an American horticulturist recently told us that well-educated, competent, and industrious British gardeners, industrious and, to cite his own description, "gentlemen in conduct and address," had a very good chance of prospering in the United States. We do not, however, advise you to go there without first writing for information and advice from such a representative horticulturist as Mr. Peter Henderson, 35 and 36, Cortlandt Street, New York, enclosing a directed envelope and the requisite amount in stamps for covering postage for the reply.

Premature Defoliation of Plum trees (*H. B.*).—We think we understood the case as far as you explained it, and do not see any reason for modifying our reply, which, however, you do not question. Nor can we add much to it. We know of no particular fungus that attacks the Plum, but the leaves are apt to assume a silvery hue and then fall. This silvery appearance, not being mentioned by you, yet is so conspicuous, we assume your trees were not thus infected. The transparent appearance is caused by the separation of the laminæ or skins of the leaves, leaving a cavity between them, but the origin of the evil, for evil it is, is not known. "As some red spider could be seen" on the leaves, far more were no doubt there, but not seen, and we still suspect insects were active agents in the defoliation, assuming the absence of the silvery hue on the leaves to which you do not allude.

Dividing Agapanthus umbellatus (*R. O.*).—The plants may be divided as soon as they have flowered, which under glass is during the early summer months. Cocoa refuse for potting should be thoroughly decayed, and may then take the place of leaf soil, or about one-third of the compost. It is no detriment to Begonias kept through the winter in boxes or otherwise after being shaken out after the foliage dies down, only they should be potted before or immediately they begin to grow. We should not like to say how long the tubers are before they begin to deteriorate, but we should think it must be a lengthened period, as we have had them for many years without noticing any failure; but, on the contrary, they have increased in size and vigour of plant under good treatment, and when they have gone off it has usually been from decay consequent on injury.

Culture of Anemones in Pots (*M. N.*).—The roots should be potted without delay, placing them about 1 inch deep in good loamy soil, with a fifth of well-decayed manure intermixed with a sixth of sand. They may be placed about 1 inch from the sides of the pot, and 2 inches apart around and inwards. The soil should be moist, and a good watering given after potting, standing the pots on and plunging in ashes in a cold frame. There they may remain with air on all favourable occasions, and protection from frost and during severe weather until they are well rooted and have made a little top growth, when they may be placed on shelves close to the light so as to prevent their drawing, and where they will have a free circulation of air, keeping the plants duly supplied with water, and affording weak liquid manure occasionally. Anemones do not stand much forcing, but the flowering may be accelerated by placing, after they are somewhat advanced in growth, in a house in a light airy position with a temperature of 45° to 50°.

Vine Outside Greenhouse (*W.*).—We are still quite at a loss to understand how three-fourths of the length of rods could be taken out of the "top window" of a greenhouse of a Vine planted in the front and trained up the roof. The point, however, is not of importance, and we accept the fact that a large portion of the Vine, and probably the best portion, was taken out of the house in September and trained up the wall for ripening the wood. We do not approve of the plan, heat, not cold, being the chief agent in wood ripening. Assuming the wood of the Vine is hard and matured, as it may be, it will not be injured by exposure to frost, as we presume the wall to which it is trained faces the south. We have known Vine rods systematically taken outside houses, after the wood has ripened in them, for the winter, and the pruning completed. You must not defer pruning your Vine till the spring, and the sooner the work is done the better; and as you wish to keep a higher temperature in the house than the Vine would rest in, the rods can be left outside during the winter and introduced in the spring. This advice is given on the assumption that the wood is matured, as if not it might be injured by severe frost. Cut back to where the wood is hard—you will not be likely to err in pruning too closely. We give you the best advice we can under the circumstances, but must decline all responsibility for a possible inferior crop of Grapes next year, at the same time hoping you will have a good one, though you have not, in our opinion, adopted the best method for producing the desired result. We suspect the leaves would be injured by dragging the rods outside and sudden exposure. If you had submitted the proposition of the "local gardener" to us we should have advised a different method of procedure, though there is the possibility of no great injury resulting from the rough treatment to which the Vine was subjected.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*James Hartland*).—The Pear is Urbaniste. (*J. Moorcby*).—1, Rhode Island Greening; 2, Golden Reinette, a very fine specimen; 3, Lord Suffield. Australian plants require greenhouse treatment as a rule, but we do not know one of the name you mention.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Lady King*).—Pernettya mucronata. (*Reader*).—1, A very imperfect specimen, but it resembles Rhapis flabelliformis; 2, Agapanthus umbellatus varicgatus; 3, Lomatia propinqua. (*Scott*).—A small flowered variety of Odontoglossum odoratum. (*N. C.*).—Dendrobium eburneum. (*F. A.*).—The plant is apparently an Oxalis, but it is impossible to determine the species from two or three crushed leaves. It is doubtful if it would prove hardy in this country, but it would be safe in a greenhouse. We are glad to learn that you find the Journal useful. (*E. Keeth*).—The tree is Pyrus torminalis. (*W. J.*).—The plant is Melilotus officinalis, and is, in a fresh state, greedily eaten by cattle, also when dried, if the stems are not too hard, which seems to be the fault in the specimen sent. (*J. B.*).—The variety is White Christine, also known as Mrs. Forsythe.

COVENT GARDEN MARKET.—November 28th.

TRADE quiet, with heavy supplies, especially Grapes.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
,, Nova Scotia and Canada, per barrel	10	0		22	0	Oranges, per 100	4	0		9	0
Oberries, ½ sieve	0	0		0	0	Peaches, dozen	2	0		6	0
Cobs, 100 lbs.	100	0		0	0	Pears, dozen	0	9		1	6
Grapes, per lb.	0	6		2	6	Plums, ½-siev	2	0		4	0
						St. Michael Pines, each	3	0		8	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	10		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	0	0		0	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	1	6		3	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	1	0		2	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsify, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	8
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	3	0		6	0	Mignonette, 12 bunches	2	0		4	0
Asters, dozen bunches	0	0		0	0	Narcissus (Paper White), 12 sprays	1	0		1	6
Azalea, 12 sprays	0	9		1	0	,, (French) bunch	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Calceolaria, 12 bunches	0	0		0	0	,, scarlet, 12 trusses	0	4		0	6
Camellias, 12 blooms	3	0		4	0	Poinsettia, dozen blooms	4	0		6	0
Carnations, 12 blooms	1	0		2	0	Pyrethrum, doz. bunches	0	0		0	0
Chrysanthemums, 12 bl.	1	0		3	0	Roses, Red, 12 blooms	1	0		2	0
,, 12 bchs.	3	0		9	0	,, (indoor), dozen	1	0		1	6
Cyclamen, dozen blooms	0	4		0	9	,, Tea, dozen	1	0		3	0
Dahlias, 12 bunches	0	0		0	0	,, yellow	2	0		4	0
Encharis, dozen	3	0		6	0	Stephanotis, 12 sprays	4	0		6	0
Gardenias, 12 blooms	3	0		6	0	Tropæolum, 12 bunches	1	0		2	0
Hyacinths (Roman), doz. sprays	1	0		1	6	Tuberoses, 12 blooms	0	9		1	0
Lapageria, 12 blooms	1	0		2	6	Gladiolus, 12 sprays	0	0		0	0
Lilac, White (French), per bunch	6	0		7	0	Violets, 12 bunches	1	0		1	6
Lilium longiflorum, 12 blooms	4	0		6	0	,, Parme (French), per bunch	3	6		5	0
						,, (French) bunch	1	6		2	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Evergreens, in var., dozen	6	0	to	24	0
Arum Lilies, per dozen	9	0		12	0	Ferns, in variety, dozen	4	0		18	0
Arbor vitæ (goldon) dozen	12	0		24	0	Ficus elastica, each	1	6		7	0
Asters, 12 pots	0	0		0	0	Foliage plants, var., each	2	0		10	0
Begonias, various, per doz.	4	0		9	0	Fuchsia, dozen pots	3	0		6	0
Chrysanthemum, doz.	4	0		9	0	Hyacinths (Roman), doz.	9	0		12	0
,, large, doz.	15	0		24	0	Lilium, varions, doz. pots	12	0		21	0
Coleus, dozen	2	0		4	0	Margnerite Daisy, dozen	6	0		12	0
Cyclamen, dozen pots	9	0		18	0	Mignonette, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0	Myrtles, dozen	6	0		12	0
Draceræ viridis, doz.	12	0		24	0	Palms, in var., each	2	6		21	0
Erica hyemalis, doz.	12	0		24	0	Pelargoniums, scarlet, 12	3	0		6	0
,, gracilis, doz.	9	0		12	0	Poinsettia, per dozen	10	0		15	0
,, various, doz.	8	0		18	0	Primula, per doz.	4	0		6	0
Euonymus, var., dozen	6	0		18	0	Solanums, doz.	9	0		15	0



SHEEP MANAGEMENT.

At the end of the lambing season folding upon late-sown Swedes and white Turnips begins, delicate ewes and ewes with weak lambs being kept back from the folds as long as they require extra care and shelter. Lamb cloths are generally fastened to the hurdles along the windward sides of such folds for shelter, but we use in preference straw-thatched hurdles, as not only affording more shelter, but as a test of the feeding of the ewes, for if they are kept short of food they invariably consume the straw upon the hurdles. The food question must now, indeed, have careful attention. The ewes should have a pound of crushed oats per head daily, with plenty of fresh sweet Barley, Oat, or Pea straw chaff. We like also to have a rack or two of whole Pea straw out in the middle of the fold. Such straw racks afford some shelter, and attract enough sheep from the thatched hurdles to cause a more equal distribution of manure than could otherwise be managed. If the flock crowds together overmuch for shelter an excess of manure at such spots often causes rank growth subsequently in the Barley crop. Such overgrown patches of Barley go down before rain or wind, the crop ripens unevenly, and the sample suffers accordingly.

If the lambs are simply required for stores, a little bran, followed later on by a few crushed Oats, is sufficient with the roots to keep them in good health. But if we would push them on as fast as possible, the bran soon gives place to "Lamb Food," consisting of a well balanced mixture of crushed linseed and compound cakes, with peas, Malt culms, Oats, bran, and other farinaceous food, all carefully crushed and mixed. Care is taken not to overfeed, and to clean out the trough thoroughly every day. The lambs are kept with the ewes till the first or second week in June. We have known them to be kept with them fully a month later, but this is unwise, the strain upon the ewes from such protracted suckling being so severe that they are sadly reduced in condition, and if used for breeding next season many die outright, and most of the lambs are weak and delicate.

Rye follows the Turnips, folding still being continued, and Mangolds are given with the Rye and dry food. After the Rye comes Rye Grass, Sainfoin, Tares, or Lucerne. A few of the most forward lambs may be sold to advantage as fat lambs. We have realised as much as 50s. apiece for exceptionally fine ones by the first week in April, but as a rule 35s. may be given as the full value of fat lambs in April and May. A lot of money will be made upon lambs this year by those who could afford to keep them on to the hogget stage, or purchased early for that purpose when they were cheap. On November 14th in the sheep market at Bury St. Edmunds, half-bred Cotswold and Suffolk hoggets eight months old realised 58s. per head, and pure black-faced Suffolk hoggets of the same age 63s. 6d. per head. Such early maturity indicates profitable farming, the profit arising from it being found in the fertility of the land upon which they were folded as well as in the high price of the sheep.

Ewe lambs answer as well as wethers for high feeding, for they are available for breeding in the first season, and are subsequently all the better for it. We are aware of the general preference—may we term it prejudice?—for not breeding till the second year, but from experience we are bound to say it answers best to push on the ewe lambs and put them to the tup at the age of eight or nine months. Our best flock of ewes was home-bred, and although the fall of lambs from them the first year was not a full one, yet subsequently their lambs have been decidedly superior to those of another flock of ewes of different ages got together by purchase.

We know it is considered that age alone imparts flavour to mutton, but farmers cannot afford to retain sheep upon their hands for a mere fancy. They have to provide food for the masses, and every week gained in the completion of the process should add to the profits. Early maturity is possible in all animals of the farm that are kept for the butcher, and early maturity therefore we must have. In feeding sheep for such a purpose the high dietary is liable to induce a feverish condition, which is connected by change of diet and plenty of green food or roots. A change from arable to pasture land for a few hours is also good, but animals while being fattened only require a moderate amount of exercise—enough for health, but not enough to cause fatigue. They also require protection from undue exposure to cold and wet. Some of the most profitable sheep we have had were finished for the butcher during the last month or two in yards.

(To be continued.)

WORK ON THE HOME FARM.

Wet weather has proved a serious hindrance to late Wheat sowing, but the rain has done much good to all winter corn already in the land. Rye, Beans, Winter Oats, and Wheat are all a good strong full plant, and though late another year's work has been fairly well begun. Long will 1888 be remembered for its remarkable changes of weather. A series of extremes has continued from the beginning of the year up to the present time, and there is nothing else possible only to keep plodding on and be always on the alert to turn every change to fair weather to account. We have still heavy arrears of ploughing to get through with, and every effort will be made to push on this important work now. Land intended for Mangolds next season should first of all be ploughed in the ordinary way, and then if the weather prove favourable it should be ridged high with the double breasted plough, and so left till spring. When this ridging is done before Christmas there is always a temptation to cart much into the furrows when the land is frozen hard, but unless there is a fair prospect of splitting the ridges so as to cover the muck with soil immediately afterwards the exposure of much in small quantities in this way for an indefinite period of time is most objectionable, for very much of its goodness is lost, and we have just so many heaps of humus void of the fertilising gases which ought to have been absorbed in the soil, but which have been lost in the air. We use some muck for Mangolds, but we never cart into the furrows till the plough can be used to cover it.

With our magnificent store of Mangolds this winter we can afford to use them freely for horses, cows, pigs, and in fact all the live stock of the farm. Even the poultry are fond of them, and it is really curious how soon a few hens will consume a huge root. We do not use them for sheep till the lambing; a few may be used previously if hard weather sets in, but roots of any sort should always be used in moderation among pregnant ewes. Cattle Cabbage are held in reserve for them at present till green food on the pastures becomes scarce, the Cabbage are then followed by Mangolds, and Thousand-headed Kale comes in still later on.

OUR LETTER BOX.

Green Fodder (*J. J. S.*).—Sow Rye and Tares at the first opportunity the soil is in suitable condition, mixed or separately as you prefer. Many persons sow in mixture on the ground that the Rye holds the Tares up to some extent. Make another sowing during the first fine weather in spring, and when the plants appear sow again. If you sow the whole plot at once, you may have more than sufficient produce at one time and not half enough at another. This appears to have been so in the case of the Trifolium.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. November.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 18	30.04	48.8	48.1	S.W.	47.4	53.7	45.1	60.2	39.9	0.010
Monday..... 19	29.946	52.6	49.6	S.W.	47.9	54.6	48.8	61.7	44.1	0.155
Tuesday 20	29.794	42.4	41.8	N.	48.2	49.0	41.9	78.9	41.1	—
Wednesday.. 21	30.131	42.6	39.7	W.	45.8	49.6	38.1	53.6	32.9	—
Thursday.... 22	30.175	49.4	46.8	S.W.	45.0	53.5	45.4	60.9	36.7	—
Friday 23	30.229	52.8	50.3	S.W.	46.1	56.0	49.3	59.2	45.1	—
Saturday 24	30.094	52.6	48.7	S.W.	47.1	55.0	49.4	57.3	43.6	—
	30.069	48.7	46.4		46.8	53.1	45.0	61.7	40.5	0.165

REMARKS.

18th.—Slight showers in the morning, cloudy day.
19th.—Cloudy throughout.
20th.—Heavy rain in small hours, bright fresh day, with strong wind.
21st.—Fine and bright throughout, except for a sprinkle of rain about 3 P.M.
22nd.—Cloudy and mild day.
23 d.—Overcast and windy.
24th.—Cloudy throughout.

A fine pleasant week, with a fair amount of sunshine. Temperature equable, the mean being about 1° above the average.—G. J. SYMONS.

THE VINERY IN WINTER.

CONTINUING this subject from page 484, it is necessary to emphasise the remarks on the thorough cleansing of not Vines only in insect-infested houses, but every inch of the structures, and especially those parts out of sight. During the present week a vinery, put in order for the winter, has been visited. The Vines had been pruned and dressed with tar and clay, as "mealy bug had been so bad;" but under a stage formed along the front of the house Gloxinias were stored away, and at the base of the withering stems masses of fluff were visible, and a removal of some of the soil revealed nests of the dreaded Vine pest. Its presence was also too apparent on the under surface of the stage, and especially at the foot of the front wall in the dry soil behind the hot-water pipes. There were thousands of insects. The man in charge appeared to think he had done all that was needed in tarring the Vines, as he had been told that was a "certain cure for the mealy bug." There is no certain cure short of absolute eradication from the house of which the pest has taken possession, and applying matter to the rods of Vines alone is utterly delusive. Such dressings may have done good in conjunction with other efforts to subdue the enemy, but not without them, and experience has proved, not in one case, but many instances, that it can be banished without the tar, and has been completely eradicated before that "remedy" was heard of; still, those who like tar can use it, as tastes differ, and every man to his taste.

Some persons have been seen to go the wrong way to work in pruning and cleansing Vines and vineries. They first prune, peel, and dress the Vines, then wash the rafters, sashbars, and wires. The pruning should be done first, but the cleansing of the Vines last. If the roof is done last some insects may fall from there on the rods, but they cannot do so if the roof-cleansing has been complete. The glass and woodwork should be washed with clean hot water, the hotter the better, both for effective cleansing and quick drying. Soapy water clouds the glass, and that is not good for plants in winter. When the woodwork is dry it will be ready for painting, if that is needed or is to be done, for everything that is needed in gardens is not done nowadays; but what can be done at trifling cost, and what should be done in vineries where insects abound or have been prevalent during the summer, is to dress the woodwork with petroleum, forcing it well into every fissure with a brush. The wires must be similarly dressed after every bit of matting and dry tendril is removed. Leaving these almost certainly means leaving insects in the coils. This may appear a small matter to dwell on, but many an example of its non-observance has proved the necessity; and probably no man who has habitually overlooked small items and apparent trivialities has won distinction above his fellows in any vocation, and certainly not in gardening. Let young men particularly bear that in mind, for it is true. In small things as in more advanced duties, in work hidden as well as that in view, be thorough, slurring over nothing. As much pains should be taken in crocking a pot as in making a bouquet, and it is impossible to bestow too much care in cleansing insect-stricken vineries. Walls must be as well washed as woodwork. Hot lime is an excellent insecticide and purifier, and it is cheap. When all this is done we come to the Vines.

Peeling and scraping all the bark off Vines, and polishing the rods as if they were to be made into walking sticks for dandies, is one of the most stupid practices that ever grew into a system. When infested with insects it is no doubt advantageous to remove the loose bark, including the scaly parts round the spurs. There is a good and distinct reason for that—namely, the exposure of insects to the applications for their eradication. If an enemy lurks behind ambuscades the sheltering agency must be removed, even if a little mischief is done in the process; but to do injury without a justifiable object is wanton, and no justification has yet been established for forcibly, and at no small trouble, stripping clean Vine rods of their natural covering. As a non-conducting medium the bark of Vines prevents those sudden chills to the sap, affecting its fluidity, during sudden falls of temperature in spring, while its absorbent nature is conducive to healthy growth by insuring much more uniform humidity than can be possible when every particle of the moisture-retaining substance is removed. In this event, the skinning, perhaps, then "painting" with clay as the medium for holding something else, may be of a little use, though applied for another purpose. But Vine rods can be cleansed without such violent skinning as they are often subjected to, even if there are insects lurking in the fissures; while if there is none the operation is inexcusable, and the dirty daubings superfluous.

It is prudent to wash Vine rods that are supposed to be free from insects, because supposition is not certainty, and the operation costs next to nothing, and cannot possibly do harm; but when insects have been troublesome on Vines in summer, rod-washing in winter is imperative, and must be done in a very thorough manner, with a solution that cannot do the Vines any harm, but which will rid them of their enemies. Gishurst compound will answer, or softsoap; a quarter of a pound of either, dissolved in a gallon of soft boiling water, violently stirring in a 2½-inch flower potful of petroleum; apply the mixture hot, or at a temperature of 130°, also liberally and briskly, with a suitable brush, till every minute crevice is filled with it, and the entire bark saturated. If this work is done well there will be an end of insect life there. If any are left behind it will be evidence of bad workmanship. Others may come from elsewhere in the spring, and take possession of the Vines, and are certain to do so if there are any left on plants, in the soil, in the fissures of woodwork, no matter where, and it is because of this that the cleansing of the house and everything in it should be searching and exhaustive. Let no one lull himself into a state of false security in assuming that if Vines are clayed and tarred, or coated with any other pigment in fashion for the purpose, they will be safe, because insects that emerge from their winter resorts will refuse to crawl up the stems. They will refrain from this when hungry men prefer going without breakfast and dinner because the roads are dirty, and not till then. Dirt is no deterrent of insects; cleanliness, thorough cleanliness, everywhere being infinitely more effectual.

It has been said the soil, especially dry soil, in vineries, affords shelter to insects in the winter. Thousands have been there protected, and come out in spring, to the surprise of owners or managers who have been at a loss to know where the invading horde "sprang from." If the soil is allowed to get dry, as it often is close to walls, and especially under a stage or near a flue or hot-water pipes, it shrinks, forming fissures, and as deep as these are so far will the pests travel and find the conditions they need for passing a few months comfortably. They also ensconce themselves in the loose dry soil near the surface of borders. All such soil, indeed the entire surface, should be removed from insect-stricken vineries, down to where the soil is moist, even if a few roots are disturbed in the process. Then if the soil below is not moist enough—and it is often much too dry—water should be given with no sparing hand, and if at a temperature of 140° it will do no injury whatever to Vine roots, but it will to insects that may happen to be left behind when skimming off the surface soil. It is almost impossible to pour in too much water where the soil has shrunk from walls through drought. Those parts should be quite saturated, and never be

allowed to get dry again. Neglect of out-of-sight places in vineries and other structures amounts to inviting insects to take possession and emerge when they can do any good for themselves and injury to Vines and plants.

Before adding fresh soil in place of that removed from the border, no harm can be done in giving a thick dredging of soot. This acts both as an insect obstacle and Vine stimulant, and if the new soil given is good, and not loose, but tolerably firm, also kept moist through the summer, new roots will take possession of it to the great advantage of the Vines; and, perhaps, the more the old roots are "disturbed," not ruthlessly, but intelligently, cutting back any that may be found shrivelled or decayed to healthy and thicker parts, the greater will be the production of young feeding roots into the soil near the surface. It is quite certain there are many portions of roots on some, if not most Vines, that would be better off than on, and their removal to healthier parts would be followed by a great increase in the number, as well as the quality, of roots succeeding.

What is wanted in the case of most Vines that are not so satisfactory as could be wished is a multiplication of roots for imbibing what the soil contains, or what may be added; but in the absence of fleshy fibrous roots much money may be spent on manures to little effect, these being then denounced as worthless, though in reality they may be amongst the best in the world, but applied under wrong conditions. First afford Vines a chance to produce a mass of active roots, then the food given will be appropriated, and its effect be seen on the foliage, wood, and fruit in well-managed vineries; for all know, or should know, that mismanagement in summer will nullify the effects of the best of soil, the best of manures, and the best of winter work.

MIXED HARDY FLOWERS.

Though hardy flowers are very often unsatisfactory there is no reason why they should be so. Nay, there is every reason for their occuping worthily a prominent position in the adornment of gardens. The simplest method is to plant in wide and long borders, strictly to limit the choice of plants to those which are distinctly beautiful, showy, and if possible, sweet, and to arrange them with discretion. Culturally the borders must have every justice done to them both before planting by thoroughly breaking up the soil deeply and adding a fair supply of fresh material to it; and after planting annual dressings either of soil or manure are of great importance. If no additions are made in the way of plants to the borders a surface dressing of clean soil is as good as anything. If, on the other hand, numbers of plants are annually put in in order to form a distinctive feature at one season of the year, then manure dug or pointed in may form the best method of placing fresh food in the way of the plants. Nothing is better for pointing in among the smaller plants than Mushroom bed refuse. This need not be put in at a greater depth than 3 or 4 inches. For strong growing plants such as Hollyhocks, Phloxes, Pentstemons, &c., cow manure is best, and may be dug in to a good depth.

I have said that hardy plants should be disposed in wide and long borders, and the reason for making that statement is that we naturally expect flowers in these borders at all seasons when they can be had out of doors. We also expect a continually shifting variety of plants with a good deal of overlapping of course, but no doubt one of the charms of the mixed border is the expectation of fresh kinds of flowers coming out continually throughout the season. That being so we must have room, and a wide border is the consequence. But many of the finest out-of-door flowers are of noble proportions as to height and width, and in order to secure due effect with these an extended border is important. Then as to limiting the choice of plants. It must not be supposed that it is meant thereby that the collection should be devoid of variety. Too much cannot be secured so long as the necessary conditions are fulfilled of beauty, showiness, and, if at all possible, sweetness of scent. But what is condemned is the not uncommon practice of picking up all sorts of weedy rubbish so long as it is called herbaceous, and taking up room that could be better filled. Another not uncommon failing with people who plant borders of hardy flowers is that of avoiding the flowers which have been improved and multiplied in variety. For my part I see no harm in making a border gay in spring with Crocuses, Tulips, Polyanthuses, Primroses, Auriculas, Wallflowers, and Anemones. These do not detract from the beauty of distinctly alpine and herbaceous plants which flower with them. In the same spirit I do not exclude from these borders tufts of Pansies, clumps of sweet Pinks and Carnations, Roses of all sections, Chrysanthemums, Phloxes, Delphiniums, Hollyhocks, Pentstemons, and many others grown in large clumps. Of Dahlias the Cactus varieties are especially suitable. These and other kinds for this purpose are best grown, not from cuttings but from divided tubers. These flower more freely, and I imagine do not grow quite so much to foliage as plants from cuttings do, and certainly they pass the winter much better. We have so many good perennial plants to select from that annuals do not occupy much space in our hardy borders. There are, however, a few so distinct and good that we try to find room for them.

As to arrangement, it is very easy to say, Put the tall plants at the back and the smallest at the front, placing those of intermediate sizes in the space between. Such advice rigidly carried out would insure a hotch-potch without character, effect, or beauty. Some hardy plants in addition to the beauty of their flowers are, as regards form, worth cultivating for that alone. Such plants, of course, need to stand in some degree clear of others. Solidago canadensis, Iris ruthenica, Spiræa Aruncus, Anemone japonica are examples of this; but there are others, such as the common white Lily, Carnations, Gladiolus, Chrysanthemums, which ought to be placed very near the front of the borders. A well arranged border may in summer and autumn have plants 3 feet in height growing close to the front edge. Of course, many of the plants are standing perfectly clear, the ground being carpeted with dwarfer flowering plants and those which have flowered during the spring and early summer months, while the back of the border is brought to proportion by clumps of tall Hollyhocks, Phloxes, Michaelmas Daisies, single herbaceous Chrysanthemums, &c.

As to colour, if a thoroughly effective border is wanted, it must be arranged so that its effect as a whole may be taken in. It is hardly possible to have too much white. That secured, yellow is of the greatest importance for giving brightness. White and yellow of themselves will make a most effective colour arrangement, and, of course, others, such as red, blue, and secondary shades and tints must be made the most of for changes. For purposes of colouring, Delphiuiums, Snapdragons, Tritomas, Lupinus polyphyllus, Aster bessarabicus, dark Phloxes, and Pentstemon, Dahlias Juarezi and Glare of the Garden, Schizostylis coccinea, Gladiolus brenchleyensis, Agapanthus umbellatus, Lilium tigrinum fl. pl. and L. umbellatum are flowers which occur to me as of great value for colouring. Under certain conditions I should not hesitate to employ Pelargonium Henry Jacoby and Clematis Jackmanni. Meanwhile I might advise that in order to improve a border of hardy flowers do not stick at a sentiment and keep out flowers which, although not strictly herbaceous or hardy, would be found of value if freely used.—B.

ROOT-PRUNING.

The advantages of root-pruning are many, if intelligently and carefully carried out. We should hear less of barren trees and inferior fruit if the knife were used more at their roots and less on their branches. There are hundreds of unprofitable fruit trees in this country, not because they are bad varieties, nor because the locality or soil is unsuitable, but because they are subjected to cultural operations only calculated to produce gross unfruitful wood, and in many cases canker. If you want a tree to produce wood only, plant it deeply in a rich garden soil, decide to keep it to a certain size and shape, never disturb more than the surface roots, which, of course, must be done once a year for appearance sake; follow faithfully such an irrational practice, and it will not take long to gather the fruit. Who, of any gardening experience, has not seen samples of this kind, and also witnessed the bundles of summer shoots annually cut away to keep the tree within bounds and to its proper shape? It is simply presumption to expect a fruitful tree under such conditions; it is totally contrary both to the theory and practice of fruit culture. For a tree to be fruitful it must have abundance of fibrous roots, and the more numerous these are close under the surface, the better will be the quality of the fruit. Of course we do not object to trees being kept to a certain size and shape, but we do condemn the baneful practice of annually cutting away large quantities of summer shoots, instead of attaining those ends by a judicious course of root-pruning. After a tree has attained the required size, the cultivator should aim at arresting the sap and causing it to accumulate in the formation of fruit and fruit buds; but it is impossible to bring about this desirable state of things if the trees are allowed to drive strong fibreless roots deep into the cold subsoil. It is impossible that roots at such a depth can ever supply food that will

be converted into other than wood buds ; and by cutting off the summer shoots we increase their sterility, because we concentrate the already superabundant sap upon fewer buds, thus causing them to break into gross shoots which are not wanted, and which would be little good if they were, for unless carefully handled it would take years to clothe such shoots with fruit spurs.

The cultivator must aim at equal balance between root and branch ; in other words, when it is seen that a tree is producing wood at the expense of fruit buds, it is a sign there are too many strong roots ; therefore, instead of annually cutting off a quantity of shoots, the tree should be carefully lifted, and the strong roots well cut back. Careful root-pruning will be found to cure the most obstinate cases of sterility, provided it arises from an undue supply of sap ; but, of course, it will have no control over climatic conditions of an unfavourable nature, such as late spring frosts, unsuitable localities, or shady positions, only in so far as it enables the trees to form more perfect flower buds.

It requires care and forethought in dealing with old established trees, as, if they have not been lifted for a number of years, there will be comparatively few fibrous roots, hence one half should be pruned one year, and the other half the next, otherwise too great a check may be given. The fact, however, of a tree being old, or of its not been lifted for a number of years, need not deter anyone from root-pruning, for if it be clean and healthy it is certain to respond and reward the cultivator.

Perfect fruit buds and first class fruit can only be formed from the most highly elaborated sap, hence the importance not only of the roots working in a congenial medium, but of the trees being planted far enough apart, and their branches thinly disposed, so that the sun's rays may reach every leaf. The best results are obtained from beginning with young trees. If these are lifted every two, three, or more years, always being guided by the amount and quality of growth the trees make, they will soon become a perfect mat of fibrous roots. Such trees may be lifted without any risk early in the autumn, just as the leaves begin to change colour, with every confidence of their ripening a full crop the following summer—other conditions being favourable. Should the soil be unduly dry, the trees must be well watered after being replanted, especially if it be done in dry weather, otherwise the wood may shrivel and the fruit buds be imperfectly formed. In exceptionally dry weather it is sometimes necessary to give the trees a good watering three or four days previous to lifting, so as to prevent too much soil falling away from the roots. An occasional soaking of water during the following summer and a thick mulching of littery manure will also be very beneficial.—J. H. W.

NOTES ON LILY CULTURE.

Any information calculated to assist those interested in the cultivation of Lilies will be always welcome, and I have read with interest the notes by Dr. Wallace at page 462, though it does not altogether agree with my experience. In the note in question reference is made to L. auratum as a moisture-loving Lily. This is hardly the natural wild condition of this Lily, though this matters little if it be found to answer under cultivation. By far the finest plants of L. auratum I have seen were the occupants of Rhododendron beds, where, while enjoying the shade about the base, which I have always regarded as necessary, could not receive much in the way of moisture unless special artificial modes of applying it were resorted to, or the season exceptionally wet, simply because the Rhododendrons with their mass of small fibrous roots would soon absorb all, particularly in hot and dry seasons. What I had hitherto regarded as "sunstroke" in years past has been almost as common with this particular species during the past almost sunless summer of 1888. Surely if moisture was needed we have had it to the full this season, but my experience in Middlesex is very much opposed to a repetition of such a rainfall. The flowers have been destroyed largely. L. auratum, L. platyphyllum, L. longiflorum varieties, and L. speciosum have in this respect suffered alike, while I do not see any appreciable difference in the bulbs, which are very good. L. Humboldti, the bulbs of which were quite flabby and shrivelled when the importation came to hand, has done splendidly, far exceeding anything I had expected.

Nearly twelve years ago when at Sydenham Hill we experimented with Lilies in various positions, more particularly auratum and speciosum vars. The former were planted, some among the Rhododendrons, which occupied steep banks of a greasy clay—the output from the Penge tunnel—which was beneath us. In this the Lilies and Rhododendrons did well. Others were in peaty beds well shaded from the hottest sun by some fine Beech trees. On single stems of L. auratum I have counted upwards of 100 flowers and buds. Others were in semi-wild places in the wood, and others still were planted in a bed continually moist though well drained. Those in the moist beds flowered fairly well the first year, but nearly all the bulbs perished ; sufficient proof as we regarded it that moisture was no good to L. auratum, especially when compared with the others that flowered so well in the drier positions above stated.

What puzzles me most respecting L. auratum is that so many imported bulbs make no basal roots at all, and the majority which do not form these roots must perish as the result, for no new bulb can be formed, hence only a shell is left behind. I fully believe in a cool shady rooting medium, and also planting at fair depth, but I have never planted more than a foot deep. As far as my experience goes, deep planting appears to encourage the growth of stem roots, and in some Lilies the stem bulbs also, *apropos* of which I may remark that I have purposely buried fresh growths of L. longiflorum eximium which had made 15 or 18 inches of new growth in transit from Japan, and when lifted, these had formed bulbs along the whole of the buried portion of the stem, and to just beneath the surface, as though they were only 6 inches deep.

This sudden collapse, be the cause what it may, seems chiefly to affect L auratum, while the varieties platyphyllum, virginale, and rubro vittatum, invariably make good basal roots and fine new bulb growth. Especially is this so with platyphyllum, which has a far better constitution than the type, and does better under precisely similar conditions side by side. To call this collapse "sunstroke," is, I consider, a misnomer, seeing it has been quite as common this year as last, and that it comes far too gradually ; indeed it has occurred to plants in pots in the greenhouse this summer, where sunstroke would be quite outside the question. The first symptoms of the collapse are in the leaves turning yellow, also the buds slightly so. These presently fall with the leaves, then the stem blackens ; but if anyone examines the bulbs as soon as the leaves begin to turn, he will find little but decayed matter, and that there had been no basal root action at all. The development of the stem, leaves, and buds up to the given stage has been supported wholly by stem roots. In the case of healthy bulbs, when the main or basal roots exist in plenty, these stem roots materially assist in maturing the blooms, and thereby lessens the functions of the main roots, consequently these latter concentrate greater force in the building up of the new bulb for the next season's flowering.

Dr. Wallace, in paragragh 3, has evidently abundant experience of L. auratum decaying, but he appears to attribute it to an unsuitable soil, and recommends deep planting with abundant moisture. For sound healthy bulbs I quite agree with the advice tendered, but what of imported L. auratum in a heavy waterlogged soil? Does Dr. Wallace find that a greater per-centage of these form basal roots under these latter conditions than under the usually accepted method ? Latterly, seeing that year by year more imported L. auratum failed than all the other Japan Lilies together, in which I include L. platyphyllum, L. eximium, and L. speciosum, I had wondered whether the damage was not done during transit—that is, during the time they are sealed up these deadly germs are at work ; at any rate the wreckage is complete when they are unpacked in many cases, and in others occurs after planting. It may be that L. auratum is less able to endure the voyage than the others named, and among which failures after planting are reduced to a minimum.—E. J.

THE FILBERT AND COB NUTS.

With the exception of the Grape Vine there is no fruit tree with which I am acquainted so much indebted to pruning for rendering it fruitful as the Filbert. I believe that I do not exaggerate when I state that the severity with which this tree is cut in exceeds even that by which the best Grapes are generally obtained. Such severe mutilation would very quickly cause disease and death in a tree less robust and less tenacious of life ; but the Filbert endures all for many years, and rarely succumbs, some plantations being quite fifty years old, although other reasons often afford a cause for removing them before that time. Filberts are often met with as a sort of undergrowth to fruit trees of larger dimensions, as standard Apple, Pear, Plum, or Cherry trees ; but they are also frequently allowed a plot to themselves, and certainly, where the soil and other circumstances favour their growth, they well deserve a place where they will not be interfered with by other trees.

I believe it is generally admitted that the Filbert and Cob Nuts are importations from the Peninsula or some other district in central or southern Europe, and not a native improvement on the wild Hazel Nut of our copses and woods effected by long and persevering cultivation, as the Apple and Plum may have been. The economical value of the latter fruits being greater than that of the Nut, the desire to effect improvements was, no doubt, more earnest

in their case than in that of the Nut, which was most probably regarded as a luxury. Dismissing that subject, however, I may remark that the same soil and situation in which the wild Hazel is found appears to be the best for the cultivated varieties—namely, hilly stony districts, neither too dry nor too wet, and of which the subsoil is penetrable by the roots of this and other trees. On such a soil is found the wild Hazel, and on such, too, the cultivated Cob and Filbert thrive the best. The aspect does not seem to be of so much consequence, as Filbert grounds are found in declivities facing all directions, not the least productive being those with a western aspect, while plenty having a northern one are equally successful; but all aspects are under this crop, and now and than a plot nearly level is met with. Generally hilly places are put under this crop after having been trenched and part of the stones taken out. The heavy loam of low lands which produce the best Wheats does not appear to answer so well for the Filbert, and a drier position should therefore be selected.

The Filbert and Cob are propagated plentifully enough from suckers at the root, which are generally bedded in some nursery ground for a year or so before finally planting out, and they are headed down to within a foot of the ground, to obtain a series of branches radiating at that height, which are so cut and arranged as to form the skeleton of the future tree. This, when full grown, in some respects resembles a basin in shape, the centre being hollow, and the outer edges about 5 feet from the ground, the diameter being 12 feet or so. Where there is a large number of trees together, and they are carefully planted in lines at 12 feet apart each way, and trimmed as they usually are, the upper surface of the rim of each tree is an exact counterpart of its neighbour, and the eye of the observer passes over the whole in a line parellel with the ground. Each tree is cut as exactly at a certain height from the ground as corn usually is, and the only difference is that the Filberts are 5 feet from the surface, and the stubble only a few inches.

The mode in which the Filbert is trained might, perhaps, be very well copied in the case of other trees. The young tree, as already stated, is cut down so as to obtain a quantity of shoots at less than a foot from the ground, which are so cut as to secure others continuing to spread in all directions from the centre with so little rise that at the radius of 5 or 6 feet their tops may not be higher than at most 5 feet from the ground. This pruning and training, however, is the work of years, and while it is progressing lateral branches pointing in the same direction are left on and encouraged, taking care that whatever young wood is allowed to remain for such a purpose should be neither too strong nor too weak, the former only producing its like, and the latter being too insignificant to expect much from; but of the two extremes the latter is by far the preferable. Some other peculiarities in pruning are also well worthy of notice, and might, perhaps, be copied with advantage elsewhere. It is well known that the Filbert and Cob (both being alike in that respect), push shoots 6 feet long and upwards. These rampant shoots are sometimes situated where a branch is wanted, or where it would be imprudent to remove them entirely; and to cut them back with the knife in the usual way would only be to encourage another of a like kind from the one so operated upon. In cases of this kind the knife is laid aside, and a rough-toothed saw is used to cut through the shoot, leaving it in as haggled a condition as it well can be, and this coarse operation assists in checking the tendency of the same branch to produce other vigorous shoots; while all small shoots are shortened in by the knife in the same way as those of other fruit trees, the portion left rarely being more than 3 inches at any place, and often less in the full-grown tree. Neither are the main and subsidiary branches at all close, the practice being to get a few (what might appear), gnarled, ugly, stumpy branches with a few spurs on equally uninviting to look at; but the practised pruner can tell tolerably well by the appearance of the tree which are fruit-bearing spurs and which are not, although it is difficult to explain how on paper. In general such shoots are small and short-jointed, and about the end of January, if the winter has not been unusually severe, small pink spots will appear, showing through the bud; these are the female blossoms, and form the embryo of the fruit; the male blossoms are expanded, and hang in catkins months before these appear. It is, therefore, better for those unacquainted with this tree not to begin to prune until these tokens of fruitfulness can be seen; at the same time it is not prudent to delay it too long, as they are easily rubbed off, and all prospect of fruit is then gone.

The female blossoms though expanded long before settled fine weather, are, nevertheless, tender, and easily injured by frost, and, therefore, a declivity facing the west is often thought to be the best, as the frosts of spring are often gone ere the sun can shine, and thus they escape injury. Overhanging Apple trees are likewise not altogether without their use, as they afford a little shade and shelter, so that large breadths of these trees and Filberts are planted together, while in not a few instances there is a crop of Hops overtopping the Filberts for some years; but this latter plan is not considered of any benefit to the Nuts, but is merely adopted to obtain the most from the ground. Gooseberry and Currant trees are by far the most common accompaniments, they being invariably planted to occupy the spaces between the Filberts while these are progressing. Assuming the latter to be planted at 12 feet apart each way, the small fruits might be 6 feet, or if the Nuts are 10 feet apart, the latter would be 5; so that for every Cob or Filbert there would be three Gooseberry or Currant trees, unless the latter or the Nuts were intermixed with standard Apple or other trees, which are often 20 feet or more apart. Generally, however, the ground is heavily cropped from the beginning, and it is by no means unusual to see Currants, Filberts, and Apple trees all growing together, the last overtopping the former two, and scarcely a speck of ground to be seen. It is very rare that a Filbert is seen on grass land, the opinion being that the tree derives advantage from tillage; and, on the other hand, as the Cherry is said to be injured by this, a Cherry orchard is generally laid down in grass. Such is the Kentish custom, and a long course of culture based, no doubt, on practical observations has determined this course to be the best in both cases.

Of the varieties most esteemed by the grower it is difficult to say much, the demand pointing out the kind most proper to grow; but there is little question that the quantity of Cobs now grown far exceeds that of Filberts, and that the culture of the former has been on the increase for many years, whilst that of the latter has been decreasing, few young plantations of these being made. The varieties of both are very limited in number as compared with those of other fruits. Sometimes when a grower has a reputation for fine fruit a local name attaches itself to the variety he cultivates, although in all probability no real distinction exists. However, there are some inferior kinds, and these it would be proper to weed out. Subjoined I give the names of a few, to which, doubtless, others might be added.

Common Cob.—I believe a much harder-shelled one than this is found in other counties, as the kind now called the common one is the same as Lambert's or Kentish Cob elsewhere. A good Nut, producing excellent clusters, with a large full kernel. I may mention that, for experiment, I once weighed a quantity of average quality, including the husks, as they were, and had them cracked, and then weighed the kernels alone, and these were found to be a trifle more than half the weight of the whole, and therefore the reader may form an idea that they were pretty full. The shell, however, is harder than that of the Filbert and improved Cosford Cob, but the kernel keeps better than the latter, and is equal to it in flavour.

Cosford Cob.—This only differs from the last in being thinner-shelled; as regards bearing it is much the same, and except that the common Cob keeps fresh longer, there is not much difference between the two.

Spanish Cob.—The distinction here is so questionable that it is doubtful if the Kentish and Spanish may not be synonymous. There are also other names, having reference to localities where large quantities are grown, but it is impossible to describe them as being applied to distinct varieties.

Red-skinned Filbert.—This is by many esteemed the finest Nut grown, and for a month or more after gathering is unquestionably so, and most people admire it during that time. It does not, however, keep so well as the Cob, and, as a plant, is less prolific, or, rather, is more tender. A few plants, however, ought to be in every collection.

White or Common Filbert.—This is more hardy than the last, and bears better; it is also a very good nut.

Frizzled Filbert.—The husk which encloses the nut being fringed at the point has given this plant its name. As a curiosity it has its admirers, and the nut is also good, though not better than those above mentioned; but the peculiarity of the husk gives it a claim to notice.

Besides the above there are many others perhaps with which I am but imperfectly acquainted. One variety is grown for the tint of its foliage resembling that of the Copper Beech, and is called the Purple-leaved. I believe, however, that its fruits are little, if at all, better than common Hedge Nuts, its merit resting solely on its foliage. There is also said to be a Dwarf Prolific of high reputation, and which doubtless deserves notice, but not being acquainted with it I cannot speak of its merits. Possibly, however, other growers from localities equally favourable to the growth of Nuts will give us the benefit of their experience. There is no fruit that I am acquainted with of which the cultivation seems to be confined to so few districts as this. Assuredly the soils and situation suitable for it are more generally to be found than is commonly

supposed, and there seems to be no reason why it should not be tried in many places in which there is every prospect of its succeeding.—N.



SOME REMINISCENSES OF THE SHOWS.

ALL lovers of Roses receive with interest and welcome the annual review of the season as given by "D., *Deal*," and will join with me, I am sure, in hoping that it may be many years before his valuable presence will be missed from the principal Rose shows, or his great experience as a florist be lost to the pages of the Journal. I should like to add a few of my own reminiscenses of two or three of the larger exhibitions, which have been recalled by his article.

Those who have never previously showed at the Crystal Palace must surely have thought, as so many have said before, that there really is no place like it for a Rose show, and except that it is not so accessible as a central London site, especially in getting away on a Saturday night, the N.R.S. are to be congratulated upon the situation of their metropolitan and principal Show. What pleasant greetings take place at these first meetings of the summer campaign! for rosarians are so friendly and courteous, and if one of our number did tell two others, as they walked together up the hill to the Palace, that his dwarf (!) Charles Lefebvres were 10 feet high, I am sure the only point in their conduct that could have been deemed inconsistent with respectful admiration was that they both paid 10s. 6d. entrance fee the next day in order to go 150 miles to show against these "giant dwarfs" in their own home.

The most noticeable feature of this, one of the National Exhibitions, was the cold, not only of the day itself, but also of the day and night before. I should think this was unprecedented. We have had wet Rose seasons before, but never in my recollection such a cold one, and the natural effect of such an inclement time was that the Teas made a very poor show indeed. It has been remarked that Mr. Baker, who regained the amateur trophy, had no Teas at all in his forty-eight, and it will be remembered that he was particularly strong in the year 1879, so that a cold wet season seems to suit him; but it was certainly not in 1881, when he was champion again. Roses were not out on the strong heavy soils, and those who relied much upon their Teas to help them in the big classes were naturally disappointed. These causes would account perhaps for Mr. B. Cant not taking quite his usual high position, but some of Mr. F. Cant's Roses in a higher position were forwarder, and by protecting his Teas from the rain he succeeded in bringing back one of the champion trophies to the eastern counties. Some strong exhibitors—Mr. Pemberton for instance—were not in a position to show in force for quite a fortnight later.

The weakness in Teas caused a noticeable absence of yellow. How is it that Mr Prince can always show Comtesse de Nadaillac for twelve of any yellow Rose? There was no doubt about his twelve blooms being yellow, but this Rose almost always has more pink and white in it than yellow with me, and yet I have won some medals with it. Souvenir d'Elise, the show Rose *par excellence*, was again conspicuous by its absence. Last year they were all over before the Show; this time, I suppose, they were decayed on their stems. Mine were.

Manchester Show, to be interesting to exhibitors who are not quite in the first class, wants "protection." The schedule is very free trade indeed. There are only two divisions. Any nurseryman or amateur may show in every class in their own division, so that the giants have it all their own way. By this arrangement a better standard throughout is probably maintained, but the actual number of entries is lessened I should think. Messrs. Dickson of Newtownards showed some pluck in exhibiting from such a distance, and the stand of these enterprising and successful raisers of new Roses was very interesting. Their new H.P. Caroline D'Arden came in for much admiration and criticism, but I think I must leave an account of new and notable Roses as seen at the Show for another letter.

The adventures undergone by an exhibitor in his journey to the Wirral Show, as ably related by him some time since in the Journal, made me congratulate myself that I shirked that undertaking—a very serious one from my abode—at the last moment. But there were trials and disappointments also at Darlington. In that one former holder of the amateur championship, as related by "D., *Deal*," had a private thunderstorm of exceptional violence all to himself, and another, on the very spot, was prevented by the lateness of the season from exhibiting at all.

My own adventures on the road to Darlington, though of no moment to the Show, were sufficiently trying. It was really not more than two minutes that I and another exhibitor left our boxes out of our sight at Doncaster, where we had to change; but during that time a wretched porter had wheeled off both our charges, and bundled them into a van. We could find neither him nor them at first, but at last we discovered them, and counted the pile as best we could by the dim light of his lamp. The number was correct; they seemed all right, and we failed to notice that he had positively placed one of each of our boxes exactly upside down. No sixpence which I ever spent did I afterwards lament more than that which I left in his unworthy palm. Absolutely upside down did those two boxes travel all the way from Doncaster to Darlington. I need not tell those who believe in the general perverseness of things that mine was *the* box of my lot—a carefully selected twenty-four, with all my best blooms in it—on which all my hopes rested. But I was spared the actual sight revealed when the box was opened of sodden moss and dirty Roses hopelessly intermingled, for my very kind companion in misfortune, who took charge of my boxes for the night, had endeavoured with great good nature to re-arrange the contents of the box as far as possible by the time I arrived on the ground.

I am very much indebted to my fellow passenger for his kindness, and I remember another example, some years ago, of the friendly feeling which happily prevails among rival rosarians. An exhibitor, who is particularly noted for his skill in "getting up," was preparing his box at one of the national shows in an important class (to us), in which I had also entered. I thought that my blooms, "in the rough," so to speak, were better than his were, but my skill in arrangement, &c., was as nought compared to his, and to my half-humorous suggestion that he should set up my blooms as well as his own he actually consented, and in a very short time their appearance was immensely improved. For once in a way Dame Justice had both her eyes open: we got equal first. I do not know what I should have done if I had beaten him. I may also say that the fortunes of my capsized Darlington box after passing the ordeal of judgment were such as to make me less squeamish afterwards about a slight jerk or tilt to boxes in transit.

The professional exhibits at Darlington seemed to be generally below par, though Messrs. Harkness appeared to hold a strong lead in H.P.'s. A number of stands were exhibited in the class for twelve Teas (nurserymen), but it goes without saying that they were poor in quality, and also that the blooms which won the amateur Jubilee trophy were "tall" indeed.

I think that, on the whole, thin-petalled Roses did not do so well as might have been expected in such a cold wet season. It is true that Prince Camille de Rohan, which I had almost discarded, re-appeared in strong force, and was to be seen in nearly every stand at the Crystal Palace; and that a Rose which I have long given up, and never thought to see exhibited anywhere—viz., Duchess of Edinburgh was to be seen in the winning seventy-two. But still I was disappointed with many of those Roses which will not "stand" in hot weather, and might, therefore, be expected to be shown in better order this year.

I happened to have a good many plants of Thomas Mills, H.P. Now, thought I, Master Thomas will really come to the fore, and with his glorious colour and perfect shape will be *the* Rose of such a season as this. Nothing of the sort. A considerable number of the plants did not bloom at all, and when I stopped the shoots at 5 (not 10) feet high, they did not bloom in the autumn, and such flowers as I did have were considerably inferior to those of hot seasons. Oh, Thomas Mills! how grateful my friends will be for your strong plants.

The Dukes of Edinburgh and Teck, which I should reckon among thinnish Roses, did certainly do a little better than usual, and so perhaps did Prince Arthur, but I failed to see any improvement in the way of lasting for exhibition purposes in Général Jacqueminot, Mrs. Harry Turner, or Dupuy Jamain, for this last is a bad one to stand with me unless it be grown very strong.

The National Rose Society's catalogue gives Fisher Holmes as a thin Rose, but in my experience it always stands well. The H.P.'s, which I found to do unusually well and really seemed to like the weather, were Duchesse de Morny especially, and Marie Finger and all her race.

Thick petalled, hot-season H.P.'s, such as Comtesse de Serenye, Marie Rady, M. Noman, Pierre Notting, Reynolds Hole, and all the very light ones, certainly failed as conspicuously as might have been expected. The only exception I remember was a bloom of M. Noman, which got the shelter of a bell-glass. It turned out the best specimen I ever saw, and won me a medal.

Of exhibition Teas I should reckon Anna Ollivier, Francisca Kruger, Madame Lambard, Marie van Houtte, and Rubens as comparatively thin-petalled. All of these did do better than other Teas, with the exception perhaps of the first, Marie van Houtte and (with me) Francisca Kruger being the best.

Thick-petalled and shy-opening Teas, like Comtesse Panisse, Jean Ducher, Etoile de Lyon, Marie Guillot, Madame Willermoz, and Souvenir d'Elise, were naturally scarce; but Madame Willermoz, by the help of toilet arts, made a handsome appearance occasionally, and Etoile de Lyon, strange to say, opened better with me than it did last season.

I have witnessed during the past week the lifting of some Roses on Manetti, which had been planted just three years and had grown and bloomed fairly well, though not as well to my mind as they would have done on the Briar.

The Manetti roots were alive, and that was all that could be said for

them. They appeared to have made no growth during the past season, and were black, brittle, and nearly fibreless. Each Rose, however, had roots of its own of a very different character, brown, tough, very fibrous, and evidently full of growth, and anyone, I think, on seeing them would say that in two more years the Manetti roots would be dead, and the Roses would be on their own roots alone.—W. R. RAILLEM.

NOVEMBER AND DECEMBER PEARS.

[A paper read by Mr. George Bunyard at the Horticultural Club.]

IN treating of these delicious fruits I feel that I can add but little to what is already known, but a club friend of mine said "Never mind, hammer away at the truth, and it will do some good." On this assurance I proceed. In my paper on "October Pears" in 1887, of those then named as ripe many are not yet in use, showing how greatly the fruit is influenced by the summer weather, and, again, the climate. A little further north puts the fruit back two or three weeks, while a warm August will forward Pears, so that it is not unusual for January and February varieties to ripen in November. A warm cellar or fruit room will also bring the later Pears earlier; one year, therefore, is but little guide to the ripening season of another.

In glancing over other leading nurserymen's lists I find Marie Louise, Durondeau, Emile d'Heyst, Thompson's, Beurré Hardy, Beurré Superfin, and Beurré Bosc there treated as November Pears, which with us have already been placed as October sorts. None of these were ready early in November. Among the remaining thirty the following are fair and remarkable for cropping heavily, and cannot be dispensed with in a collection, as they frequently bear when those in my special selection are not fruiting. These are Van Mons Léon Leclerc, of refreshing acidity and very juicy; Beurré Diel, of rich flavour, but apt to be gritty; Glou Morceau, rather watery and cold, though sometimes AI from a warm wall; Général Todtleben, very large, but not often first class; Duchesse d'Angoulême, rather coarse, but generally fertile; Marie Louise d'Uccle, a good bearer and a hardy sort for cold soils, sometimes good; Nouveau Poiteau, very large, melting and delicious, though somewhat pasty. It is, however, a free bearer, and if taken before too ripe is often first rate. It is green in colour when matured, and apt to decay at the core. Passe Colmar, a fine wall Pear, most prolific, but has a sugary, clogging, Colmar flavour that I do not admire. It, however, is in season for a long time and a sure bearer. Beurré Bachelier, very large and fine on a wall and on Quince stocks, must not be kept long or it becomes insipid. I have eaten this of first quality. Triomphe de Jodoigne is again a remarkable cropper and of large size, but has that cold watery taste which is not approved. It is yet of value as a certain bearer. Alexandre Lambre is a sweet Pear and a great bearer. Among the little known, newer, and not yet fully proved varieties are Beurré Baltet, which I have eaten as good as Marie Louise; Beurré Dumont, very rich flavour; Vineuse, large and prolific, sometimes very good; Madame Leroy and President d'Osmonville (two which came into prominence at the 1885 conference). All these will probably require a warm situation or a wall. Fondante Shirriott, a valuable Pear of the Passe Colmar style, most prolific, is likely to prove a valuable addition.

I now come to the best of winter Pears. Baronne de Mello, a handsome small russety fruit of great excellence; Doyenné du Comice, the king of all Pears, and yet unapproached, good either from an open tree or as a wall fruit; Beurré d'Aremberg, most fertile and of delicious full flavour, very prolific, but only to be attempted in warm soils; Conseiller de la Cour, a large long fruit, very prolific, of a rich sub-aromatic flavour—this does well in cold soils, and is a good grower; Knight's Monarch, one of the most valuable, as it lasts three or four months in a season. I consider the sugary and aromatic Bergamot flavour blended in this variety most refreshing and delicious. It succeeds as an open tree or on walls (on the Pear by preference). It must be double-worked upon the Quince. It has a habit of casting its fruit before it is fully ripe, but its virtues condone this fault.

Winter Nelis is one of our best winter Pears. In the south it is a December variety, and if from open trees is often ripe in November, while from a wall it keeps longer, even till February. It has a full Pear flavour, sweet, juicy, melting, rich, and delicious. It is tender on cold soils, and is worthy of the best south-west wall that can be found for it. Zéphirin Grégoire is a delicious melting fruit about Christmas, and a good bearer, rather small. Beurré de Jonghe is a deliciously flavoured kind, and will keep until February. It is, however, a slow grower, and seems to require the Pear stock to make a tree. Suffolk Thorn is most distinct in its aromatic and delicate flavour. This is rather small but of the first class. Seckle, small and delicious. This being of a Gooseberry size, can be put into the mouth whole, and thus we get all the juice and aroma. Much flavour is lost in peeling off the skin.

I have now gone through my special selection of ten varieties, and in passing I would condemn the Broekworth Park, or Bonne d'Ezée. We do not want crisp flavourless Pears for dessert. Urbaniste is delicious, and has a peculiarly rich musky flavour. It bears, however, so sparsely that we have long discarded it. The standard of excellence I take to be such Pears as one could peel and offer to an invalid, easily digested, refreshing to parched lips, and making a welcome change from the kitchen nick-nacks.

Root-pruning is absolutely necessary to get first-class fruit of clean appearance, good colour, and size, and feeding must be carried out liberally. The Rev. W. Wilks' enormous Pitmastons at the Conference were of most delicious flavour and devoid of coarseness and watery juice, proving that Pear roots have the digestion of an ostrich, and a chemical laboratory equal to the occasion. Much stress has been laid on the reduction of sorts. In my opinion this may be carried too far, as Pears of good quality, if not first class, are better than none at all. I would advise such sterling varieties as those in my special list to be planted in many aspects and situations in duplicate to prolong their season. The second Conference at Chiswick proved again the excellence of the Quince stock for Pears, but in soils that are very sandy or dry trees on Pear stocks can be relied on to produce good fruit if attention is paid to culture, and the roots kept within solar influence by root-pruning and lifting, with efficient mulching in June.

Mr. Wildsmith, in his recent paper at the Conference, named twenty-five varieties as the minimum which would keep up a supply for a family, and finds himself in a difficulty to supply from twelve only. Pears are sometimes kept in too cold a place, when they ripen imperfectly, and the chemical changes which take place on maturation are arrested. Mr. Wright at the Conference related how he ripened some Josephine de Malines by placing them on the pipes of a greenhouse in a box, and this hint might be followed by those who want to fill a gap in their supplies. Stewed Pears are being increasingly appreciated, and in these days, when doctors forbid pastry, are very useful for dyspeptics. The best for early use are Gratioli of Jersey, Gilogil, and General Todtleben, and also Triomphe de Jodoigne; while for later use, Catillac, Bellissime d'Hiver, and Uvedale's St. Germain, *alias* Belle Angevine, will be useful. I hope you will excuse this digression, that I may call attention to them.

FORCING LILY OF THE VALLEY.

I HAVE taken your Journal for a long time and found much pleasure in reading it. One of your correspondents writes in the issue of the 8th of November that the Lily of the Valley is one of the most difficult of all plants to force in midwinter, and that the forcing appliances in most private gardens are not such as to be able to accomplish it satisfactorily. From the middle of December you can see in all the flower shops in Hamburgh, Berlin, Vienna, &c., any quantity of Lily of the Valley, each spray bearing from eight to fourteen flowers, which have been forced in market gardens. It is the most profitable business during the months of December and January; sometimes it happens the amount forced in these two months is more than the demand, therefore the price is less than two months later (in February and March).

The arrangements of the market gardeners for forcing purposes consist mostly of stone boxes 3 feet broad, 1 to 2 feet deep, just above the hot-water pipes. The bottoms are made of iron bars covered with slate, then they are filled with about 6 inches of sand. The crowns are then planted in lines, well watered, and covered with glass lids. To keep out the light these must be covered with paper or mats.

The temperature must always be kept at 70°, rising to 90°. After three or four weeks, sometimes sooner, the plants begin to flower; then the glass is uncovered, and later on the lids are taken away altogether to harden the plants. When the first buds begin to open ten to twenty crowns are planted together in 3 to 5-inch pots, put in a light place, and after perfect development are brought to the market.

In private gardens these arrangements are seldom to be found, although Lilies are required to flower at Christmas. One way is in the propagating pits; another is to place over the hot-water pipes or boiler a wooden box with holes in the bottom, filled with 6 inches of moss to keep the air moist; in this the pots containing the crowns are plunged, or you can put sand on the moss and the roots in this, and when they begin to flower take them out and place them in pots.

Taking all together we do not consider the Lily of the Valley a difficult flower to force in midwinter if we have ripe crowns and a warm place in one of the houses. Great care must be taken that the heat and moisture are proportionate.—MILDE, *Oeveljonne, near Hamburgh.*

WINTER CUCUMBERS.

ALTHOUGH autumn-raised plants show a disposition to bear freely, they should not, nevertheless, be allowed to swell more fruit than is necessary to meet the demand. All superfluous fruits and flowers should, therefore, be picked off as soon as they appear. Keep the shoots sufficiently thinned and pinched to prevent crowding. Allow a little front and top ventilation on bright mornings as soon as the thermometer registers a temperature of 75°, allowing it to run to 80° before increasing the ventilation, the object being to secure a sturdy growth in the plants. From Christmas to the end of March is the most critical period in the year to maintain a good supply of Cucumbers. Hence the necessity of getting the plants in the best possible condition for the work which they have to do during the time indicated. If bottom heat is supplied by means of hot-water pipes, and the plants are growing in narrow, shallow, and efficiently drained borders, copious supplies of clear tepid water should be given at the roots three or four times a week, more or less frequently, according as the weather is bright or sunless. If a surface-dressing of Beeson's manure be given once or twice a week before water is supplied at the roots it will prove beneficial.

The amount of atmospheric moisture to be distributed in the Cucumber house depends entirely upon the condition of the plants and the weather. Severe weather means severe firing, with a corresponding increase in the distribution of tepid water through the syringe over the plants and in the house generally, morning and afternoon, as much with a view to promoting a genial temperature as keeping the plants free from the attacks of red spider. In short, a humid rather than an arid atmosphere should be aimed at. In dull mild weather, when but little firing is required to maintain a minimum temperature of 65° to 70°, no moisture should be distributed in the house other than that arising from the application of water at the roots, otherwise mildew would be likely to attack the plants. In this case the affected leaves should be dusted with sulphur while damp, and a rather dry and airy atmosphere be maintained for a few days. Fumigation with tobacco paper a couple of evenings in succession will make short work of aphides.—H. W. WARD.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of the above Society was held in "Anderton's Hotel," Fleet Street, on Monday last, December 3rd, at 7 P.M. The President, Mr. E. Sanderson, occupied the chair, and there was a full attendance of members, including Messrs. R. Ballantine, Wm. Holmes, J. R. Starling, E. C. Jukes, G. Stevens, L. Castle, G. Gordon, C. Harman Payne, R. Dean, C. Gibson, Newton, Bevan, Rundell, &c. The meeting was a somewhat busy one, not the least important of the proceedings being the election of thirty new members, bringing up the total to 630. It was stated by the Hon. Secretary that satisfactory arrangements had been made for the annual dinner of the Society to be held in "Anderton's Hotel" on December 13th next, when a large attendance of members and friends is expected; among them Sir Lewis Pelly has promised to be present. A selection of music will be given under the direction of Dr. J. F. Haskins by Miss Mary Belval, Miss Ethel Winn and Messrs. J. Bartlett and Franklin Clive.

Mr. C. Harman Payne stated that he had received letters from numerous correspondents abroad in reference to the catalogue and the Society, including communications from Bordeaux, Toulouse, New York, and Constantinople. Some discussion followed respecting the terms upon which foreign members should be elected, and it was resolved provisionally that the subscriptions for America should be one dollar per annum, for France five francs, and Germany four marks. Mr. Payne was, however, requested to draw up a definite scheme to be submitted to another meeting. The challenge trophy offered to societies at the Society's Royal Aquarium Show was also considered, and it was finally decided that it should take the form of a salver or shield, upon which the name of the winning Society could be engraved each year. Messrs. Sanderson, Jukes, and Ballantine were commissioned to procure an article of a suitable character.

Mr. Holmes observed that deputations from Hull, York, and Leeds had waited on him at Sheffield in reference to the provincial show of next year, and that an informal discussion was held with the two former by himself with Messrs. Ballantine and Castle. Intimation had also been received from Derby and Brighton to the effect that those societies would be glad to enter into communication with the National on the same subject. A question was asked respecting the Sheffield Show, and Mr. Holmes in replying said that it appeared likely that the financial results would be very satisfactory, as it had been largely attended, and in regard to the Show itself he remarked that the only deficiency was in the open classes, which he attributed mainly to a lamentable want of pluck on the part of both the northern and southern exhibitors, who seemed to be equally afraid of each other. He thought Mr. Packman, as an admirable exception and a representative of the south, deserved much credit for entering the competition.

Another matter brought before the Committee was the proposition as to holding a centenary celebration of the introduction of the Chrysanthemum into Europe. It had originated in a letter addressed by Mr. Holmes to one of the daily papers, and on the occasion of the Chrysanthemum Show at the Crystal Palace a meeting was held at which a resolution was passed approving of the idea, and requesting the National Society to undertake the scheme. It was thought undesirable to attempt it next year, as the time would be insufficient for carrying out all the details on an extensive scale. The following year (1890) would, moreover, be the centenary of the introduction of the plant into England. After some discussion Mr. Gordon proposed that it be referred to the new Committee, to be elected in January of next year, as he thought 1890 would be the best time for the celebration, especially as something on a large scale was announced to be held in Edinburgh next year, and a somewhat similar fête was being arranged for Ghent.

A letter was read from Mr. Doughty, Angley Park Gardens (which was also sent to this Journal last week) proposing that a conference should be held on the afternoon of the annual dinner. The general opinion was, however, that there would not be time to make the necessary arrangements, and on the motion of Mr. Dean, seconded by Mr. Rundell, it was resolved that a conference should be held in conjunction with the Society's January Show in the Royal Aquarium, a sub-committee, comprising Messrs. Lewis Castle, George Gordon, and C. Harman Payne, being entrusted with arranging a programme.

IMPROVED PRIZE CARDS.

IN your report of the Birmingham Show the description given of the improved prize cards used applies in every particular to the class cards used at the Hull shows, where for the last four years the names of the exhibitors, the entry and class numbers, as well as the description of the exhibits have been printed instead of written, as is usual at most shows, so that after the awards are made and the cards turned, all particulars appear "in print" on the front, no writing whatever being necessary, all that is required being to affix the adhesive labels indicating the prize in the spaces prepared for them. The plan is more costly but a decided improvement on the old method of writing, but is a great saving of time at a busy period, and reduces the risk of mistake to a minimum.—EDW. HARLAND, *Hull.*

CHRYSANTHEMUM FABIAN DE MEDIANA.

IN Scotland this Chrysanthemum has been grown and shown in splendid condition, and though I have seldom seen it fit to be shown as a Japanese Anemone, it proves to be a real typical Japanese bloom, in form and size resembling Duchess of Albany. The vexed question is, Why this variety cannot be staged as a Japanese, or Japanese Anemone, like Triomphe du Nord, which can be shown as a reflexed or Japanese variety. I would like to hear what some of your able correspondents have to say on this matter, as I am anxious that exhibitors and judges should know how this variety is to be treated when shown as a Japanese bloom, and not in the Anemone class.—J. W. MACHATTIE, *Newbattle Abbey, Dalkeith.*

CHRYSANTHEMUM BLOOMS DAMPING.

ALTHOUGH I have been a grower of Chrysanthemums for a number of years, the present season is the only one that I have experienced any difficulty with them as regards damping of the blooms But it must not be supposed that this is my first experience with the subject, as I have several times previously seen collections badly affected, and had conversations with the growers as to the probable cause of it.

Most cultivators are of opinion that damping in the flowers is caused by overfeeding the plants in the autumn when the buds are set, and up till the time the flowers commenced showing colour. After very careful observations, I am convinced that this is the principal if not the sole cause of the trouble, and if I am not mistaken those persons who use sulphate of ammonia freely have the greatest proportion of damped flowers. I am not alone in saying this, as several good growers in this neighbourhood are of the same opinion. It is no doubt an excellent manure, but used in a season like the present I think it causes too great a flow of sap in the already overcharged stems. Hence the mischief which follows. Of course I am alluding to Chrysanthemums grown for exhibition, and the fewer the blooms a plant is allowed to carry the more danger there is of damping.

My plants only suffered from this in a slight degree, and I will now give the names of those that were affected. Fair Maid of Guernsey, Belle Paule, Edouard Audiguier, Duke of Berwick, and Empress of India. None of these became affected to any great extent, but I think it was because I took prompt measures to stop it, and I will now endeavour to explain how I treated the plants. On looking over them one morning the last week in October, I was dismayed to find a beautiful

bloom of Empress of India, about three parts expanded, with a quantity of brown spots on most of the lower petals, just as described by Mr. Molyneux in his book, page 77. In twenty-four hours these had increased in size considerably, and it was quite evident the affected petals had begun to decay. This was very disappointing, and I felt quite at a loss to know what to do. The house was dry, hot-water pipes fairly warm, thermometer standing at 50°. There could be nothing wrong in the atmosphere. Suddenly it occurred to me that there might be too great a flow of sap to the flower, as the plant had been liberally fed and the leaves were large and of good substance. Acting on this, with knife in hand, I took an upward cut nearly half through the stem of the plant, just above the first break. About a foot higher up I made another cut on the opposite side; in addition to this I allowed the soil in the pot to become rather dry, and when it was necessary to apply water I put a piece of lime about the size of a walnut in two gallons of water, and when dissolved I gave the plant a good soaking. This was repeated every time water was required, and the result was most satisfactory. The development of the flower was not hindered in the slightest, but damping was entirely stopped, as I did not observe a single floret go wrong afterwards. This has been my treatment with each variety affected, and in every case I have been quite satisfied with the result.—F. HOPKINS.

Now the shows are over, and anxiety on the part of exhibitors greatly lessened, I hope we shall have some discussion on the most important points in the cultivation of this beautiful autumn flower. Damping has been very prevalent this autumn, and already useful notes have been contributed to this Journal on the subject. After nearly a year's labour and care it seems hard to lose fine exhibition blooms a few days before the date of the show. To steer entirely clear of this evil every season, will, I am afraid, be almost impossible; nevertheless, experience and watchfulness may do much to diminish it. That it is worse some seasons than others is undoubted, notably the present one. Unripe wood with overfeeding is, no doubt, one cause, but I think atmospheric conditions have also something to do with it. I had one fine bloom of Belle Paule among others nearly open when we had some heavy rain and local fogs in this district, which in two or three days caused nearly half the florets to damp. I removed them, and then we had a week of fine weather, but no more florets damped, although the plants remained in the same position, subject to the same treatment, except having a little more air. Some varieties damp more quickly than others, Val d'Andorre being the worst in that respect with me. Taking the buds at the proper time prevents damping somewhat. Of three plants of Golden Dragon I only secured one crown bud at the right time. This bloom remained quite fresh, while others on the same plant, and the other two which were not taken at the proper time, damped as they opened.

KEEPING THE BLOOMS.

It is necessary sometimes to keep the blooms fresh for a time, as some of our exhibitors can testify. Different methods are resorted to, but having dry lime in the shed where the plants are placed certainly struck me as a capital idea when I read Mr. Tunnington's paper on "Chat About Chrysantemums" in the Journal. It is well worth trying, and no doubt will be by some next autumn. I quite agree with Mr. Doughty, page 489, that some further discussion on the respective papers read by Mr. Tunnington and Mr. Molyneux at Sheffield would be highly beneficial, the two most important matters being the proper time and manner of striking cuttings of the incurved section and wood ripening. These two points are, I believe, not thoroughly understood by some cultivators.—G. GARNER, *Amberwood Gardens, Hants.*

CHRYSANTHEMUMS FROM AMERICA.

AT the present time there appears to be more good Japanese varieties of Chrysanthemums sent to this country from America than from any other source, and all these are more or less characterised by a stiff sturdy habit of growth. At the Floral Nursery, Maidenhead, I saw some new varieties in flower a few days since, some of which promise to make good distinct exhibition sorts. The plants only having been imported late this season were small, but the flowers were comparatively good. Leopard, mauve spotted with pure white; Thomas Cartledge, orange, incurved florets; Minnie Palmer, creamy white; John Thorpe, rich deep lake; J. Collins, coppery bronze; Elizabeth Bliss, amaranth shaded violet; George Maclure, purple shaded amaranth. These appeared distinct both in colour of flower and foliage.—H. D.

CHRYSANTHEMUMS SUITABLE FOR ARRANGING IN VASES.

AT this time of the year we are generally treated to abundance of Chrysanthemum literature, which is read with a keen relish by all true lovers of the autumn queen. The names of the flowers in winning stands, which are published, are closely watched. New varieties noticed at shows or recommended by well-known experts are carefully noted down. Lists are made out of those varieties intended to be grown for next season's campaign, and hopes run high concerning the victories to be achieved during the coming year. All these things are necessary and desirable for growers of Chrysanthemums for exhibition purposes; but as there are many others who grow their plants principally for supplying cut flowers for floral arrangements, for which purpose small sprays of light and elegant flowers are the most effective, I have therefore arranged a list of those varieties found most useful for such purposes. Very few incurved varieties are suitable, because when grown to a sufficient size to bring out their true form they are too large except for specimen glasses or filling in the bases of larger ones, and even in such positions two-thirds of Chrysanthemum lovers would prefer the wavy flowing outlines of the Japanese varieties. Indeed so extremely varied is this section both in form and colour, that it embraces nearly all the best varieties suitable for the above named purpose. The plants should be grown as bushes, some of the shoots being partially disbudded, just enough to prevent the flowers having a crowded appearance, while others should be left without any thinning out, so as to supply useful sprays with half opened buds clustering around the central ones. Such shoots as these are always effectual when well arranged, but some varieties of Japanese are more better adapted for the purpose than others, on account of their thread-like petals, and also in consequence of the length of the footstalks of the flowers formed around the central one. Where the footstalks are short, when fully expanded, the central and lateral flowers form a solid mass, which, it is needless to say, is not the kind of material for forming elegant arrangements.

Japanese.—Baronne de Prailly, Belle Paule, Madame B. Rendatler, Bouquet Fait, Chang, Cœur Fidèle, Cossack, Duchess of Albany, Ethel, Fair Maid of Guernsey, Fernand Feral, Fimbriatum, Garnet, Gold Thread, Jeanne Délaux, Lady Selborne, Le Spectre Toulousain, Meg Merrilies, Madame de Sevin, Mdlle. Lacroix, M. Moussillae, Roseum superbum, Soleil Levant, Thunberg, Triomphe de la rue des Châlets, and Madame Desgranges.

Reflexed.—Golden Christine Peach Christine, Chevalier Domage, Cullingfordi, Julia Lagravière, and Progne.

Anemone.—Acquisition, Fleur de Marie, Duchess of Edinburgh, Mdlle. Cabrol, Marguerite Villageoise, Sœur Dorothée Souille, and Souvenir de Lardenne.

Incurved.—Aimé Ferriere. Angelina, Antonelli, George Glenny, Mrs. Dixon, Lady Talfourd, Lady Hardinge, Le Grande, Miss Hope, Mr. Gladstone, Mrs. G. Rundle, and Refulgens.

Pompons.—Bob, Cedo Nulli (white), Cedo Nulli (gold), Cedo Nulli (brown), Duir-Duir, Gold Button, Helène, Maiden's Blush, Marabout, Miss Wheeler, Mrs. Bateman. Prince Victor, Sophy, St. Michael, Sunset, Rose Trevenna, and Trophée.—H. DUNKIN.

NEW AMERICAN CHRYSANTHEMUMS.

A BLOOM has been sent to us of a variety named Mrs. Alpheus Hardy, for which an American firm of florists is said to have given 1500 dollars, or about £300. The specimen we have seen must be an exceedingly poor example of the variety, for it resembled a small reflexed white Japanese with flat florets, and such as would be scarcely admissible in a third-rate stand at an English show. The papers on the other side of the Atlantic, however, sing its praises in unstinted terms. Miss Emily Louise Taplin in the *American Florist* thus refers to the variety as shown at the Orange Chrysanthemum Exhibition in New York on November 8th:—"The star of the Show was the much-heralded 'Mrs. Alpheus Hardy,' unquestionably the most unique introduction of recent years. One might say the most unique introduction in the entire list of Chrysanthemums without being far out. It is a large globular flower, long-petalled like the Japanese, yet in regularity of form resembling the Chinese type. In colour purest white, free from faintest tinge of colour, and, most remarkable feature of all, the backs of the petals are covered with long silky hair. The effect is indescribably strange and beautiful, it can be likened to a white ostrich tip, and nothing else. One can see at once what an acquisition this must be to the trade. Its keeping quality is as yet unknown, but the texture is thick and firm. It was a lovely sight to see these flowers resting on a bed of Adiantum; perhaps the only Chrysanthemum which does not become coarse by comparison with delicate Ferns. This flower received special honours. The Committee reported on it thus:—'New Chrysanthemum Mrs. Alpheus Hardy your Committee consider is the most remarkable acquisition in the way of new and beautiful plants that has been introduced in recent times.'"

One of the reporters in a New York daily paper, however, appears to have acquired a confused idea respecting the plant, for it is thus noted:—"A novelty will be the exhibition of the Mrs. Alpheus C. Hardy Orchid, an entirely new variety imported from Japan. It is believed that the owner has the only specimens of this wonderful Orchid in the world. He has carefully bred and propagated them until he now has in his conservatories over 5000 specimens. The flower is an exceedingly quaint and peculiar one, exactly resembling a white ostrich tip. Next May these wonderful flowers will be on the market."

Other varieties are mentioned as of superlative merit, the following remarks occurring in one of the reports:—Too much cannot be said in favour of the new Chrysanthemums exhibited by Mr. William Barr. Mr. Wm. Barr is a wonderful crimson, incurving petals lighter beneath. Peter B. Mead is perhaps the most remarkable golden yellow, with long tubular petals. Sunset is what its name implies, glorious yellow shading into orange and red. Mrs. Carnegie and Miss Alice Brown are more fine ones. Mr. Barr's exhibit was of remarkable beauty all through; there could be no question of its superiority."

A TALK ABOUT CHRYSANTHEMUMS.

THE correspondent of a local paper has, it appears, been "interviewing" C. E. Shea, Esq., of Foot's Cray, whose gardener, Mr. Packman, has exhibited Chrysanthemums with a considerable share of success this season. The substance of Mr. Shea's replies to his interlocutor's numerous questions was as follows:—

"We exhibit principally in the Japanese classes, for the reason in

the first place that I think that section far more beautiful than the stiff and formal incurved. However, that is a matter of taste. But, beyond that, artificial dressing of the blooms is universally resorted to in the incurved section, and no gardener not resorting to this device, but staging his blooms as grown, would have the faintest chance of securing a prize. An expert dresser can with inferior win against superior flowers. This does not seem to me to be horticulture. However, the practice is so universal that the only practical protest against it is not to encourage showing in this section. Therefore we confine ourselves almost exclusively to Japanese. Generally Japanese are exhibited as grown. Lately there have been indications of attempts to dress this section also, but in my opinion such attempts only serve to detract from the natural grace and wild beauty of the true Japanese flower, and the practice will not probably find many imitators.

"Last year we grew for show purposes 160 Japanese, sixty incurved, forty reflexed, and eleven Anemones, in all 271 plants. This year we have slightly increased our force. Such a small number tells greatly against us in open competitions against the large establishments and nurserymen throughout the kingdom. Many private establishments grow from 600 to 1000 and even more plants. One nurseryman grows for show purposes alone 2500 plants in addition to his ordinary stock. With a small stock every plant must be made to do its duty. Moreover, when the best blooms are cut for the earlier shows it is very difficult with so small a stock to sustain one's form at later shows.

"Next year will be the centenary of the introduction of the Chrysanthemum, or at least of the large flowering kinds, into Europe, and I understand that steps are being taken to mark the event by a grand Chrysanthemum Fête or Festival. I should think that a combination of the shows of the National Chrysanthemum Society and Crystal Palace at the latter place would be the best form for the celebration to assume. The National Society's Show has quite outgrown the Aquarium. As you know, the Chrysanthemum was cultivated in China and Japan for centuries before its introduction into Europe, and our best new varieties still come from these countries. The earliest authenticated record of the flower in Europe is by Breynius, who in 1689 speaks of a small flowered variety as growing in Holland. It was in 1789 that M. Blanchard, of Marseilles, introduced the large flowering varieties. Next year, therefore, will, by a coincidence, be the bi-centenary of the small and the centenary of the large varieties. Of late years the enterprise of our leading nurserymen has resulted in the introduction of some splendid novelties from Japan and China. The size now reached is extraordinary, some of the more loosely growing varieties, when extended, measuring over 10 inches. Of late introductions in Japanese I consider the best to be Avalanche, Marsa, Florence Percy, Edwin Molyneux, and Mr. H. Cannell. For the first three we received first-class certificates at the Crystal Palace Show last week.

"As to the best varieties to cultivate for show purposes, one cannot go far wrong in accepting the list of varieties recently put forward by the Committee of the National Chrysanthemum Society. I should give, in addition to the novelties before mentioned, the leading varieties thus: Japanese—Fair Maid of Guernsey, Meg Merrilies, Baronne de Prailly, Comte de Germiny, Belle Paule, Marguerite Marrouch, Thunberg, Boule d'Or, Japonaise, and Mdlle. Lacroix, not to mention many other equally good varieties. Among the Japanese reflexed I should give the first claim to Elaine, Maiden's Blush, La Triomphante, Val d'Andorre, William Holmes, J. Délaux, and Criterion. In the incurved a collector must have, amongst others, Empress of India, Lord Alcester, Empress Eugénie, Barbara, Golden Empress of India, and Hero of Stoke Newington. Among the reflexed, Chevalier Domage, Dr. Sharpe, King of the Crimsons, Cloth of Gold, Cullingfordi, and Golden Christine are at top. In large Anemones, Empress, Gluck, Mrs. Pethers, and Fleur de Marie; and of Japanese Anemones perhaps Fabian de Mediana, Mdlle. Cabrol, Sœur Dorothée Souille, Madame Berthe Pigny, and Madame Clos are the best. There are also many novelties in the various classes, but these have yet to be proved before they can be recommended to the amateur cultivator. It is of the highest importance, especially where the number of plants grown is limited, to make a judicious selection of suitable varieties. One continually sees at shows varieties exhibited which ought to have been excluded years ago. To retain such spoils the board, and weakens the exhibitor's showing power."

"Can general interest in the flower be so promoted as to make it the winter flower *par excellence*, as the Rose is that of the summer?"

"I think that we may almost say that the Chrysanthemum is already the winter flower. A recent inquiry, instituted, I believe, by the National Chrysanthemum Society, has shown that in this country alone there are 100,000 growers of the Chrysanthemum. This tells its own tale as to the popularity of the flower. Of course, to keep to the front rank at the larger shows is another question. In such competitions, as in every other where the front rank has to be reached, the individuality of the cultivator comes in. The thought and industry needed on the part of the gardener who is to win in first-class contests must, I need scarcely say, be beyond the common. In such a season as the past special devices had to be considered, and means found to neutralise the effects of the almost constant rain. I was asked by a gentleman at the Aquarium what was my gardener's secret in producing the fine blooms staged by him. My reply was, 'Eleven, or I should say, twelve months' constant and intelligent care.' This is the real secret of success, rather than any special and complicated 'composts' or manures. Furthermore, one must not stand still; constant experiment to feel your way onward must not be neglected. One important element in the matter is also an accurate knowledge of the peculiarities of the several varieties with a view not only to their general culture but to the accurate 'timing of the buds' so that they shall present themselves for 'taking' exactly at that period which (having regard to the date of the show) is most calculated to produce the finest blooms. Here we have one of the inner secrets of the cultivator—a secret which he generally manages to keep to himself. There are three rocks upon which the amateur generally comes to grief. These are over-potting, over-watering, and over-feeding the plants. As to the general question of the advisability of permitting one's gardener to show, my view is, encourage it. It is often said that if showing is allowed other things are neglected. I have not found it so. I think that no honestly minded gardener will neglect his employer's interests in such a case. Should it, however, in particular instances be found to be otherwise, then by all means at once have an understanding on the point. I think that showing should be encouraged for many reasons. Intelligent and active-minded men in every class need some outlet for their surplus mental activity and legitimate ambition. What better channel into which to divert them than their ordinary calling and occupation? I have seen something of the gardeners who stand as the leading competitors and prizwinners at these shows, and I can testify to their superior bearing and intelligence. Such men cannot fail to raise the moral standard of their whole class. Again, on the general question of encouraging horticultural tastes amongst the poorer classes, our cottage shows, and the kindly emulation which they stimulate, are. I think, not without their value at a time when so many things exist to sunder instead of draw closer the different classes of the community. Besides, we must all have, in reason, our pleasures and amusements. Lord Bacon said that 'of all earthly pleasures gardening was the purest.' I think that Lord Bacon was not far out in his statement."

FISH POTASH MANURE.

LAST year I had occasion to write favourably of this manure, and on further trial of it I can express myself as more pleased with it than before. During the past season I used it for Chrysanthemums, Potatoes, Onions, Tomatoes, Cucumbers, Melons, &c., so that I gave it a fair trial, using 15 cwt. of it. Sown in the ridges with the seed Potatoes it produced sturdy, but not rampant growth, with the foliage of a dark healthy colour. On lifting the crop was all that could be desired, and for my soil remarkably clean. For Tomatoes it was dug in with some quarter-inch bones, and I had a very fine crop of fruit, growing them in a similar manner to that at Chiswick, with the exception that my stakes were all slanted, the house being three-quater span, and the glass going down to 1 foot from the soil. The first two rows, in fact, were trained along the wires, there not being height enough for stakes. The plants were grown on the single-stem system, and I found the result from the house in which the potash was used far superior to that in which horse manure was dug in. In the latter the growth was rampant, the flowers would not set, and when they began to carry fruit the bunches were small, but the fruit weighed 9 and 10 ozs. each. With the potash the fruit was borne from about 9 inches above the soil, the growth was short-jointed, carrying a regular crop of fair-sized bunches of fruit, averaging 5 ozs. each. This manure was also very satisfactory used in Cucumber house and Melon frames, for my Cucumbers bore well from March to the beginning of November, and my Melon plants carried two crops, although I am sorry to say I failed to ripen many of the later ones. However, I cut forty-two from a three-light frame as a first crop, which I considered very satisfactory, the fruit averaging 2½ to 3 lbs. each. I may add that I was successful when exhibiting a dish of Tomatoes against eight others last week, being awarded the premier place at our local Chrysanthemum Show, and my fruit have commanded 2d. per lb. more than that of other growers in my neighbourhood throughout the summer.—H. S. EASTY, *Cornard, Sudbury, Suffolk.*

POINSETTIA PULCHERRIMA.

FEW winter flowering plants are more effective than the Poinsettia when well grown; its bright crimson bracts render it attractive in the stove or warm conservatory. It is also useful associated with Palms, Ferns, Richardias, and Primulas for room decoration. A few remarks on its cultivation may be of interest to some of your readers. After the plants have flowered they should not, as is frequently the case, be laid under the stages and allowed to take care of themselves until the time for propagation comes round, but be kept near the glass and attended to in watering until the leaves fall, after which less water will be required. They may then be transferred to a house or pit where the temperature does not fall below 50°. Towards the end of April treat the plants more generously by syringing them and closing the pit early in the afternoon, taking care not to overwater them. By these means strong healthy cuttings will be secured, not the least important point in their cultivation. When the shoots are about 2 inches long they should be taken off with a heel and inserted singly into small pots in a light compost of loam, leaf soil, and sand, well watered and plunged in a bottom heat of about 80°. Where a large stock is required successional cuttings may be taken.

As soon as the cuttings are rooted remove them from the propagating pit into a temperature a few degrees lower, keeping them near the glass. Repot them as they require it in a mixture of

loam two parts, leaf soil and Mushroom bed manure one part each, with sufficient sand to keep the compost open. Equally good results may be obtained in 5 or 6-inch pots as in those of larger dimensions. The plants should stand on a hard surface to prevent the ingress of worms. Plants raised yearly give better results than old plants cut back. When they have been gradually inured to the air the lights may be drawn off altogether, as they are greatly benefited by the dews; but it will not be safe to leave them off after the middle of September. Keep the plants well syringed, and give an occasional surface dressing of artificial manure. Sturdy plants clothed with thick leathery foliage to the edge of the pot should be the aim of the cultivator. Without this condition large bracts cannot reasonably be expected.—J. Cleare.

Notes & Gleanings

Events of the Week.—To-day (Thursday) the annual meeting of the National Rose Society will be held at 3 p.m. in the "Hotel Windsor," Victoria Street, Westminster, Dr. Robert Hogg in the chair. The Society's annual dinner will be held at 6 p.m. the same evening in the hotel named. The Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Westminster, at 11 a.m. on Tuesday, December 11th, and the National Chrysanthemum Society's annual dinner will be held in "Anderton's Hotel," Fleet Street, at 6 p.m., on Thursday, December 13th. The usual sales of bulbs and plants will be held by Messrs. Protheroe & Morris, Stevens, and Smail & Co.

—— Royal Horticultural Society.—The following notification has been sent to us:—It is anticipated that there will be six vacancies at least on the Council of the above Society to be filled by the Fellows at the annual meeting in February next. The following gentlemen have signified their wish to be relieved of the work, which during the present year has been very heavy—viz., Mr. Thiselton Dyer, Prof. Michael Foster, Dr. Hogg, Sir Edmund Loder, Mr. Harry Veitch, and Mr. G. F. Wilson.

—— There are two interesting facts in relation to Rhododendron Fortunei, of which you published a very pretty figure in last week's issue. They are—First, This is the only garden Rhododendron from China, whence it was sent by Fortune in 1859. Second, That the flowers have six, often seven segments in the corolla, and fourteen stamens, whereas the usual number are five of the former and ten of the latter. There are some fine examples in the Rhododendron dell at Kew, which flower freely every year.—W.

—— The Gardeners' Royal Benevolent Institution.—A legacy of £50 has been bequeathed to this Institution by the late Mrs. Cameron, who was the widow of the late Mr. George Cameron, who for many years was the respected head gardener to the Duke of Richmond at Goodwood Park, Sussex. He was a life member of the Institution, and died in 1870.

—— The Kingston and Surbiton Chrysanthemum Society will hold their thirteenth annual Exhibition on Nov. 12th and 13th, 1889. Mr. G. Woodgate, Warren House Gardens, Kingston-on-Thames, is the Hon. Secretary.

—— We are glad to learn that the first prize, consisting of a gold medal, has been awarded to Messrs. H. P. Bulmer & Co. of Hereford for their noted Credenhill cider in bottle, shown by them at the great Exhibition now being held in the Palais de l'Industrie at Paris.

—— The *Hereford Times* says:—"*Le Cidre* of the 25th November gives an account of the International Exhibition of Cider and Fruit which has just been held at the Palais de l'Industrie in Paris. In the class for cider, open to Switzerland, England, the United States, Canada, and Germany, the first prize medal was awarded to Messrs. Bulmer & Co. of Credenhill; the second to Mr. Ham, of Exeter; third, Mr. Bosley, Lyde; fourth, Mr. Watkins, Hereford; and fifth, Mr. M. Jones, Hereford. For perry, Messrs. Bulmer & Co., of Credenhill, took first prize; second, Mr. Watkins, Hereford; and third, Mr. Jones, Ledbury. For cider and perry fruit, Mr. John Watkins, Pomona Gardens, Hereford, took the second prize of a silver medal; and Mr. Jones, Ledbury, third,

—— We have received the preliminary programme of an International Horticultural Exhibition, which is to be held at Berlin from the 25th of April till the 5th May, 1890. Judging from the number of classes, it is intended to be a very grand affair. We should like to see a thorough good exhibition of German horticulture, and there is no better place for it than Berlin.

—— Gardening Appointments.—Mr. T. Grant has resigned his situation as gardener to Major Murray, Ossemsley Manor, Christchurch, to take charge of the gardens and grounds at Silwood Park, Sunninghill, Ascot, for T. Cordes, Esq., who has lately purchased the above estate. Mr. J. Smart, late fruit foreman to His Grace the Duke of Portland, Welbeck Abbey, Notts, has been appointed head gardener to Sir Ralph Payne Gallwey, Bart., Thirkleby Park, Thirsk, Yorks.

—— Grapes at the Liverpool Show.—A correspondent, who was not an exhibitor, desires to state that the Judges at the above Show awarded an extra prize for a basket of splendid Grapes; but the Committee, as they had power to do, overruled it, granting a certificate instead. Our correspondent thinks this might have been granted in addition to confirming the Judges' award, as the latter would have assisted in defraying travelling charges to the Show.

—— The very pretty climber, Eccremocarpus scaber, is of vigorous growth, and if planted against a south wall it will endure the winter provided the roots are protected with some long litter or leaves It flowers from July to November. The orange scarlet corollas are very attractive and freely produced on the young growths. Seeds are ripened readily, which should be sown in pans on a hotbed. When the seedlings are large enough they may be potted singly into thumb pots placed in heat a few days until established, when they should be moved into the greenhouse and shifted into larger pots as they require it until planting-out time in May. Any light garden soil will suit them admirably.—J. L., *Bishops Waltham.*

—— It was noted a short time since that Mr. J. F. Duthie, Director of the Botanical Department, Northern India, had accompanied the recent military expedition to the Black Mountain country. The Black Mountain forms the northern boundary of the district of Hazara, which forms a long narrow valley, bounded on the west by Cashmir. Extending far into the heart of the outer Himalayan range, it is shut in on either side by mountains, rising to 17,000 feet. The flora is almost wholly unknown. But the time of the year was unfavourable for botanical collecting, and Mr. Duthie writes to Kew—"I did not manage to find much of botanical interest on the Black Mountain; excepting the fine bits of forest, composed of Abies Webbiana and Pinus excelsa on the crests of the mountain, the country is barren in the extreme."

—— The Rear Guard of Summer.—Mr. G. E. Aldridge, F.G.S., writes from Winscombe, Somerset:—"It may interest many of your readers to know that during the last week or two the following flowers have been seen in cottage gardens on or around the Western Mendips—Arabis (white), Arbutus, Calceolaria (small yellow), Canary Creeper, Chrysanthemums, Dahlia, Escallonia, Escholtzia, Fuchsias, Gladiolus, Hollyhock, Honeysuckle, Hydrangea (pink), Jessamine (yellow winter), Laurustinus, Lobelia (blue), Magnolia (large buds just expanding), Marigold (common and African), Mignonette, Myrtle (buds large and healthy, here and there a flower), Pansy, Passionflowers, Peas (Sweet), Petunia (white and variegated), Phlox (tall lilac and dwarf red), Pink, Pyrus japonica, Roses (three or four sorts), Snapdragon, Stock, Tritoma, Valerian, Verbena (red), Veronica, Violet, Wallflower. This profusion of flowers is all the more remarkable, following, as it does, on a very cold October, a cold and rainy summer, and a generally cold period of fourteen months."

—— At the ordinary weekly meeting of the members of the Wakefield Paxton Society, held at the "Saw Hotel," Councillor Milnes, the President, was in the chair, and Mr. Brown, gardener at Hatfield Hall, occupied the vice-chair. The subject for discussion was "The Chrysanthemum," and it was introduced by Mr. T. Garnett one of the Honorary Secretaries. He read a capital paper on the subject, and gave some useful and valuable advice to growers of the Chrysanthemum, of which he exhibited a dozen remarkably fine specimens. An interesting discussion followed, in the course of which it was mentioned that vast quantities of Chrysanthemums have been lost this season owing to the wet and almost sunless summer and the keen frost, which played sad havoc with the plants during the first week in

October. At the close of the discussion, Mr. T. Senior, solicitor, an ex-President of the Society, proposed a vote of thanks to Mr. Garnett, and it was seconded by Mr. W. Glover, supported by Mr. George Gill, and very heartily carried and suitably acknowledged.

—— Wakefield Paxton Society.—The following is a programme of meetings for the fourth quarter, session 1888-9. Meetings are held at the Society's rooms, "Saw Hotel," Westgate, each Saturday evening commencing at eight o'clock prompt. 1888—December 8th, "A few Hints on Watering," Mr. L. Twigge. December 15th, "Our Fishermen; How and Where they Live," Mr. C. J. Willis. December 22nd, "Soils and Manures Suitable for the Vine," Mr. J. P. Carter, Cowick. December 29th, Musical Evening; Mr. T. Carbert and party (Sale of periodicals); 1889—January 5th, "Asparagus; Its Culture," Mr. James Keighley, Bradford. January 12th, "The Eucharis amazonica," Mr. W. Daniels, Mirfield. January 19th, "The Primula," Mr. E. Fenner. January 26th, "The Azalea," Mr. W. Frankland, Leeds (Sale of periodicals). February 2nd, "Origin and Function of Fruit," Mr. T. Garnett. February 9th, "Hardy Shrubs for Forcing," Mr. J. G. Brown. February 16th, "The Vascular System of Plants," Mr. G. W. Fallas. February 23rd, "The Hyacinth for Decorative Purposes," Mr. G. Wassell (Sale of periodicals), March 2nd, Annual Meeting. Messrs. G. W. Fallas and T. Garnett are the Hon. Secs.

—— The Mild November.—When severe frosts occur early in October a term of mild weather often follows—a second autumn, as it is sometimes described. Referring to the mild weather that has prevailed in the south of England of late, a daily paper says:—"Only four times during the month of November has the minimum temperature for a day fallen below the mean, and only once has it gone so low as freezing point. If the average of all the daily minima is taken it gives a result more than 5½° above what is usual. Similarly the daily maximum has only six times failed to reach the mean, and has only once fallen short of 40°. On one occasion it was more than 10° above the mean, and has been on the whole nearly 2½° higher than usual. With the exception of half the second week in the month, when an anticyclone over the North Sea brought a few cold days, we have been under the influence of cyclonic disturbances. The storms and wrecks which have taken place on our coasts have resulted from the same movements of the atmosphere which have brought us the warmth of the Bay of Biscay and of the hills of Spain."

—— "M. C." writes—"In Messrs. Parker & Son's nursery, St. Michaels Hill, Bristol, may be seen at the present time a very fine house of White Bouvardias. The majority of the plants are B. candidissima. Although other sorts are fully represented, none can approach the free-flowering character of this variety. The plants, I was informed, were raised from cuttings struck and potted late in May, and although rather backward in making a start, the growth that ensued consequent on judicious application of sulphate of ammonia and a subsequent shift into 6-inch pots was all that could be desired. As a variety of sterling worth it appears to be pre-eminent both on account of its habit of rooting quickly from cuttings, its vigorous growth, and also its superiority for producing a wealth of pure white and delicately scented flowers at a time of the year when such are greatly appreciated. The habit also of flowering freely from side shoots is, moreover, very marked in this variety, enabling the plant to produce a long succession of bloom, a matter of great importance where the plants are grown as they are in Messrs. Parker's establishment to supply cut flowers for the daily manufacture of bouquets, wreaths, and other floral decorations.

—— The recent Chrysanthemum Show at Ascot was a great success both as regards exhibits and the attendance of visitors. Groups are always remarkably well shown here, and this year were better than ever. Mr, Lane, gardener to Miss J. Smith, King's Ride, Ascot, has several years held the leading position, and on this occasion his group was probably the best he has ever put together. The plants composing it were dwarf, well arranged, and carrying extremely fine flowers. This exhibitor also succeeded in winning the challenge cup offered with the first prize for thirty-six cut blooms (half incurved, remainder Japanese) which has to be won three times before finally won. This has now been won by three different competitors. Last year's winner, Mr. Pape, The Highams, Bagshot, having recently changed situations, was placed at a disadvantage; he was, however, a very good second. Mr. Popple was awarded the special prize for the best Japanese bloom in the Show; and Mr, Hughes for the best incurved bloom—Golden Dragon and Empress of India respectively. Other successful exhibitors were Messrs. Cole, Sinclair, Thorne, and Woodhouse.

—— Carters' Provident Sick Fund.—The third annual meeting of members was recently held in the warehouse of Messrs. James Carter and Co., High Holborn. The chair was occupied by Mr. C. H. Sharman, the general manager, who in a few well chosen remarks pointed out the usefulness of the Society. The number of subscribers during the year had been 289, making a total of 449 during the short existence of the Society. Fortunately there was no case of the death of any member to be recorded, but fifty-three members had become chargeable to the funds by reason of sickness during the year, and the payments on that head were one and a half times in excess of the previous year. Nevertheless it was found possible to set aside a further sum of £25 to the reserve fund, to make a donation of £10 to the Hospital Saturday Fund, and to distribute a bonus at Christmas, which should represent rather more than half the year's subscription of every participating member; after providing for these a comfortable working balance would still be held in hand. All the offices are honorary. The confidence of the members in the executive officers was shown by the unanimity with which they were re-elected, and a very pleasant meeting terminated with the usual vote of thanks to the Chairman.

—— I have read with much interest from time to time the controversy on Grapes Scalding which has been published in the Journal. One of the vineries in my charge, about 90 feet long, contains a collection of Grapes—viz., Black Hamburgh, Lady Downe's, Madresfield Court, Alicante, Gros Maroc, Muscat of Alexandria, and several other varieties. The Vines are about twenty years old and trained on the front trellis, and all receive the same treatment. The house is ventilated by two levers, and air is admitted equally the full length of the house, and in the evenings reduced accordingly. Yet amongst all the Vines we had no scalded berries except on Lady Downe's, and which were so bad that most of the bunches had to be cut off. I might also state that of the last mentioned two Vines were growing in the middle of the house, so that the morning or evening sun could not strike the bunches; they also had ample foliage and are in excellent health. If Mr. Bardney believes that other Grapes are as easily scalded as Lady Downe's, I should be glad if he would explain through your paper how it was Lady Downe's scalded and all the others escaped.—J. B.

—— Mr. J. Mallender sends the following summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for November:—Mean temperature of month, 45·6°. Maximum on the 16th, 60·5°; minimum on the 28th, 29·5°. Maximum in the sun on the 20th, 97·4°; minimum on the grass on the 28th, 20·2°. Mean temperature of the air at 9 A.M., 45·2°. Mean temperature of the soil 1 foot deep, 45·7°. Nights below 32°, in shade one, on grass nine. Total duration of sunshine in month, thirty-one hours, or 12 per cent. of possible duration. We had fifteen sunless days. Total rainfall, 3·87 inches. Rain fell on twenty-three days. Average velocity of wind, 15·3 miles per hour. Velocity exceeded 400 miles on twelve days, fell short of 100 miles on one day. Approximate averages for November:—Mean temperature, 41·7°; sunshine, fifty-three hours; rainfall, 2·04 inches. The warmest, wettest, dullest, and most windy November yet recorded here, except that November, 1881, was warmer. The nights have been especially warm. Primroses and Daisies are flowering freely.

—— Mr. A. Chapple, Cattistock Lodge Garden, Dorchester, writes:—"The Rainfall for November taken at this place was 10·28 inches. As I only commenced the beginning of the year recording it, would you state in your Journal the average fall for November; and if this is the biggest fall of rain you have heard of for last month?" [This is the "biggest" that has been sent to us, and if accurate, is, we suspect, unusual for the district.]

—— The Kew Museum has lately received a choice collection of interesting Botanical Objects from Corea, collected and brought home by Mr. T. Watters, who was Acting Consul in that country from January 1887 to June last. The specimens in question, which consist of hand-screens, fans, &c., made of paper from the Paper Mulberry (Broussonetia Papyrifera, *Vent.*), together with samples of the paper itself, sun-blinds made of split bamboo, &c., illustrate in a remarkable degree the extreme neatness and accuracy of the Coreans in their handicrafts. The following are some of the specimens received and now exhibited in the Kew Museum:—A series of different qualities of paper, all made from the bark of the Paper Mulberry. These comprise plain white or cream-coloured papers of various degrees of finish, used for drawing, writing, packing, &c.; also coloured papers such as are used by the people for writing birthday missives upon. It would seem that the Coreans, like the Japanese, use paper very extensively for a

great variety of purposes. Thus, for fans, the handles of which are delicately ornamented, as well as for hand-screens, tobacco-pouches, coverings for hats in wet weather, paper is equally applicable ; for the latter purpose, however, it is steeped in oil, which makes it thoroughly waterproof. The hand-screens are made by first forming a foundation of thin strips of split bamboo radiating from the handle, which is afterwards covered so completely on both sides with a thin paper film and varnished that a strong and durable article is the result.—(*Nature*).



ODONTOGLOSSUM HARRYANUM.

Like most of the cultivated Odontoglossums this species is evidently extremely variable, and it is somewhat strange that by far the best varieties have come into notice some time after the type was made known. It was introduced several years since by



Fig. 56.—ODONTOGLOSSUM HARRYANUM.

Messrs. Horsman & Co., Colchester, but subsequently passed into the hands of Messrs. J. Veitch & Sons, Chelsea. It was named in honour of Mr. Harry J. Veitch by Professor Reichenbach, who said, "It is a fresh type, a grand and unexpected surprise, comparable with O. luteo-purpureum and O. tripudians." The original form as figured in Veitch's "Manual of Orchidaceous Plants" is much inferior to that represented in our illustration (fig. 56), which was prepared from a flower shown at one of the meetings of the Royal Horticultural Society in the past season. In most large collections of Orchids O. Harryanum is now included, and is rapidly becoming a favourite, though we have not yet seen established plants with many flowered scapes 2 to 3 feet long, as promised by some who have described the plant. Messrs. J. Veitch thus describe the originally introduced form :—"Pseudobulbs oval-oblong, compressed, furrowed and ribbed when old, 2½ to 3 inches long, diphyllous. Leaves leathery, oblong, obtuse, 7 to 10 inches long. Scapes but imperfectly developed from the imported plants. Flowers 3 to 3½ inches across, vertically ; sepals elliptic-oblong, wavy, deep chestnut-brown marked and tipped with golden yellow ; petals oblong, acute, reflexed at the tips, the basal half white, traversed longitudinally by broad, close-set mauve-purple lines ; central area chestnut-brown, apical part yellow ; lip oval-oblong, three-lobed, the side lobes rotund, turned upwards, white, heavily striped with mauve-purple, the anterior lobe subcordate, white, changing to pale yellow ; crest deeply fimbriate in front, golden yellow. Column terete with two minute apical toothed wings, white at the base, changing to yellow upwards." The variety represented in our woodcut is distinguished by the great breadth of the sepals and petals, especially of the former, the colouring being also deeper and richer.

ORCHIDS IN FLOWER.

In Mr. A. H. Smee's garden, The Grange, Hackbridge, the following Orchids are now in flower in the different houses, and the list will give an idea that they are by no means dull. Angræcum sesquipedale, Barkeria elegans, B. Lindleyana, Cattleya Dormaniana, Cœlogyne assamica, C. speciosa, Cymbidium giganteum, Cypripedium Harrisianum, C. insigne, C. insigne Chantini, C. insigne Maulei, C. Schlimii album, C. Spicerianum, C. venustum, C. villosum, Dendrobium bigibbum, D. heterocarpum, D. Wardianum, Dendrochilum uncatum, Disa graminifolia, Epidendrum xanthinum, Lælia autumnalis, L. a. Protheroianum, Lycaste plana Cumminsi, Lycaste Skinneri, L. Smeeana, Masdevallia attenuata, M. amabilis, M. Chimæra, M, Chimæra Gorgona, M. Davisi, M. Harryana, M. Houtteana, M. maerura, M. tovarensis, M. triangularis, Maxillaria nigrescens, M. palmifolia, Odontoglossum Alexandræ, O. Cervantesi, O. constrictum, O. Insleayi splendens, O. luteo-purpureum. O. maculatum, O. nebulosum candidulum, O. Pescatorei, O. pulchellum majus, O. Rossi majus, Oncidium cheirophorum, O. crispum, O, flexuosum, O. Forbesi, O. ornithorhychum, O. Phalænopsis, O. varicosum, and Phalænopsis leucorrhoda.

One large plant of Oncidium crispum is very remarkable. The pseudo-bulbs were made out of doors between July and September, and when taken in the flower spikes were about 14 inches in length, the two spikes together produced 100 blooms ; unfortunately the point of one was broken off or there would have been twenty more flowers at least. The Disas are thriving.

The following Orchids are flowering now in Messrs. John Laing & Sons' Nurseries, Forest Hill :—Calanthe vestita, C. vestita rubro-oculata and rosea, C. Veitchi and the variety superba. Cattleya gigas, Cœlogyne Turneri, Cypripedium Harrisianum, C. insigne and the variety Maulei, C. Spicerianum, Dendrobium formosum giganteum, Galeandra Dives, Lycaste Skinneri alba, Masdevallia Harryana, M. Lindeni, M. tovarensis, Odontoglossum Alexandræ, O. grande, O. Pescatorei, Oncidium Marshallianum, O. tigrinum, O. varicosum Rogersi, Phalænopsis amabilis, P. grandiflora, Pilumna nobilis, Sophronitis grandiflora, and Zygopetalum intermedium.

ONCIDIUM AUROSUM.

I have three plants of Oncidium aurosum, which I fail to flower to my satisfaction. I have heard of it being grown with 200 flowers on a spike. I have had it now for three years, and have never been able to get more than twenty to thirty flowers on a spike at the most. Perhaps some of your correspondents will be able to enlighten me on the subject as to temperature and the soil it requires. Our plants are grown in a temperature of 65° by day, falling to 58° by night, or thereabouts. They are in a mixture of peat, sphagnum moss, charcoal, and sand. I may also mention that the house is an early vinery, and the plants remain in it all the year round. Would the shade of the Vines have anything to do with it? They make strong growth with stout leathery leaves. I manage to flower amongst others Oncidium ornithorhynchum, Cymbidium eburneum, Cattleya crispa, and C. Mossiæ superba in the same house.—B. P. D., *Wakefield*.

A VISIT TO BOLTON HALL.

Now that the season for Chrysanthemum shows is drawing to an end, I have sent you a short account of what I saw of fruit-growing in Wensleydale, in the North Riding of Yorkshire. Having a little time to spare I paid a visit to the above named establishment, the Yorkshire seat of Lord Bolton, when I was met by the courteous gardener, Mr. Hall, who kindly took me round the grounds. He evidently is an enthusiast in fruit-growing, and although such a bad season I was agreeably surprised to see a very fair crop of fruit, both Pears and Apples. Some of the Pears were of a good size and well coloured for the north of England—*i.e.*, Pitmaston Duchess, Souvenir du Congrès (good colour), Doyenné Boussoch, Jersey Gratioli, Beurré Diel (very good), Beurré Clairgeau (good colour), Hacon's Incomparable, and many others. Mr. Hall likes to try experiments, for the trees are grown on the wall and are very old, the stem being carried along close to the ground and a number of verticals taken up from them. I enclose the measure of some and number grown on each. No. 1—length 26 feet, height 14 feet, thirty-six vertical rods, ten varieties as follows : Fondante d'Automne, Doyenné d'Eté, Marie Louise, Napoléon, Marie Louise d'Uecle, Doyenné du Comice, Prince of Wales, Doyenné Boussoch, Citron des Carmes, Dr. Trousseau. No. 2 Pear, 14 feet high, 17 feet long, eight varieties—Beurré Clairgeau, Passe Crasanne, Beurré de Ranee, Beurré Diel, Comte de Lamy, Winter Nelis, Marie Benoist and Thompson's.

No. 3 Pear, 14 feet high, 23 feet long, thirty-four vertical rods, ten varieties. No. 4—Marie Louise, 14 feet high, 23 feet long, thirty-one vertical rods. No. 5—12 feet high, 39 feet long, or 39 yards, and forty-seven vertical rods. I was convinced from what I saw of the trees and fruit that Pears if well looked after, and suitable sorts planted, would do well in the north. I must not forget to mention the well cropped kitchen garden with abundant supplies for winter use. A capital collection of Orchids is being formed. The favourite tree at Bo ton Hall seems to be the Yew, for it is seen in all parts of the grounds. There are some fine Larch trees on the estate. From the shawl at Leyburn a magnificent view of the county is obtained. It is regarded as one of the finest natural rock terraces in England.—A. J. Brown.

GARDENERS' ORPHAN FUND.

Though the night was so inclement there was a large attendance at the Committee meeting held on Friday night last. The subject of collecting boxes was prominent. Some time ago a gross of these was purchased for £8 15s., and already the returns from them exceed £15, while a large number have not been opened. To meet further applications from friends of the Charity more of these boxes were ordered for distribution. It is found the excellent custom is growing of passing these boxes round at flower shows, and that much more is dropped into them in this way than by leaving them stationary, no matter how prominent the positions. There can be little doubt that when the general public, who are interested in flowers and gardening generally, become acquainted with this fund and the great need for its existence, that a substantial amount in the aggregate will be received in the form of a large number of small contributions by visitors to horticultural shows, and it is hoped there will not be wanting friends to act as helpers of the Charity on those occasions. At the meeting under notice upwards of £12 was paid in, including £2 by Mr. W. Bates, collected at the Twickenham Show; £3 6s by Mr. G. Bishop (Teddington Show); £1 10s. 6d. from Mr. Scott (Bradford Show); £1 1s. from Mr. Wooderson (Bexley Show), and £1 1s. 3d. by Mr. G. Cummins, from visitors to The Grange Gardens, Hackbridge, and the Croydon Show. Grants were mentioned as probable from the Committees of the York Show and the Yorkshire Union of Horticultural Associations. A letter was read from Mr. Drummond of Stirling to the effect that he could get little or no support for the Fund in Scotland. This is the experience of the Committee, but they are not in possession of facts accounting for the circumstance. Scotland, however, supplies two excellent officials in Mr. A. F. Barron and Mr. J. Walker. An offer, the first of the kind received, was made by a gentleman to take charge of one or two children, as his home was childless. The thanks of the Committee were accorded to all who had kindly assisted the Charity and made it and its objects known in the districts in which they reside. It is believed there are noblemen, ladies and gentlemen who would not be unwilling to open their gardens to the public for a day at a convenient time in the summer, subject to a small charge for admission, in support of the Charity, if its nature were brought before them. This has been done at Heckfield and a few other places with gratifying results.

Floral Concert.—I have the pleasure to acknowledge the receipt of cheque, value £31, from Mr. O. Thomas, Chatsworth, as the result of the floral concert held at Chesterfield on November 14th, in aid of this Fund. Very great credit is due to Mr. Thomas and his fellow gardeners, members of the Committee—viz., Messrs. W. H. Horabin, W. R. Bloxham, H. Smale, W. E. Jenkinson, J. Fletcher, J. J. Nelson, G. Parkes, S. Polkinghorne, W. Leighton, J. Turguy, and J. Hutton, who have worked so energetically with Mr. Thomas to achieve such a splendid result.—A. F. Barron, *Hon. Secretary.*

A Good Example.—At the Birmingham Chrysanthemum Show, Mr. Hughes, the Secretary, and local Secretary of the Gardeners' Orphan Fund, engaged a bright little girl to walk about the Exhibition with an Orphan Fund box fastened to her breast for the reception of gifts from a penny upwards—but a penny was asked for—and with contributions from exhibitors a sum of £3 or so was collected for the Orphan Fund. If this could be done at all flower shows, even with much smaller amounts, what a goodly sum would result. Flower shows as a rule should do something for the horticultural benefit societies, and a small subscription or donation would not be missed. In the Black Country there is a small place—Darlaston—which has its three year-old Floral Society, and the Committee have just voted the sum of 10 guineas to the Free Library fund there, from the profits of their Exhibitions.—W. D.

FRUIT CULTURE ON SMALL FARMS OR ALLOTMENTS.

Mr. S. Rawson labours in the right path, and his efforts to arouse greater attention to the important question of fruit culture should be well supported, and the cause not only of fruit culture but flower and vegetable culture also spread throughout the land. Is it not a mistake to send out of the country £25,000,000 for the common necessaries of life, and £8,000,000 annually for fruit? Surely it is not impossible to reserve a portion of the above vast amount without impairing the interests of other crafts. In these days, when every help is needed to guide and better the condition of the masses, if we cannot hold out the hope of all being able to sit under their own Vine and Fig tree it is not unreasonable to give the masses an opportunity of being able to appreciate home produce in preference to foreign productions.

It would be well if spade culture was more adopted, for without doubt it is the best implement for turning up the soil, and the greatest returns follow. Therefore it is most desirable to develope the resources of the soil chiefly by spade culture. The landlords might be invited to help the industrious by providing the raw material to work on, and the workers want good rules to guide them in their operations. Depend upon it there lies in the better cultivation of the land remedies for many of the evils which wound the feelings of civilisation.—X.

DICENTRA CANADENSIS.

Under the name of Dicentra are included several elegant hardy plants which have been variously named Dielytras or Dielytras and Corydalises. Some of these are familiar plants in North America, bearing special popular names like Dutchman's Breeches (Dicentra cucullaria) and Squirrel Corn (D. canadensis), the last named being



Fig. 57.—DICENTRA CANADENSIS.

the subject of our illustration (fig. 57), and one of the most graceful of the family. In Canada and some of the Northern United States this Dicentra is frequently found in rocky woods, producing its white and purple tinted fragrant flowers freely during May and June. The leaves are finely cut and slightly glaucous, forming a dense tuft from which partially drooping racemes arise bearing the neat pendulous flowers. The plant is a perennial with numerous small yellow pea-like tubers; it is hardy, readily increased, and succeeds well on a rockery or in an ordinary border.

PLUMS AND THEIR PRESERVATION.

At a recent meeting of fruit-growers in Gloucester, Mr. M. W. Colchester-Wemyss read a paper on French Plums, and the methods of preservation adopted on the Continent, from which we extract the following:—

In the autumn of last year the idea occured to Sir W. Wedderburn that it might be possible to make so-called French Plums in Gloucester-

shire. He, some few others, and myself, had conversations on this particular point, and also on the general subject of the best means to adopt in order that our fruit-growing districts in this county might extend the scope of their operations and might take measures to avoid the great loss that occurs when the market prices for fruit are very low. Such was the case the year before last, when quantities of fruit literally rotted on the ground because it did not pay to incur the expense of gathering and sending it to market. The idea eventually arrived at was that a factory might perhaps be established in the heart of one of the districts for the conversion of Plums into French Plums and Prunes, and for various other processes of fruit preservation. Four or five subscribed a small fund to be expended in obtaining information, and, as the result of our deliberations, we determined to endeavour to procure the services of a Frenchman acquainted with the French Plum process, who would come to Westbury and try experiments with our local produce; and it devolved upon myself to carry out this idea. I accordingly inserted advertisements in French papers and corresponded with several Frenchmen, but with no result beyond ascertaining that great ignorance existed on the subject. At last one day I was in the offices of a friend of mine in London, when two Frenchmen came in, with one of whom I was slightly acquainted. I at once asked him if he could tell me anything about French Plums, and he said, "Oh! no; but my friend here, M. Calvet, can." M. Calvet, who is one of the very largest of the Bordeaux shippers, then told me that he knew the Plum district well, and that he was intimately acquainted with a gentleman, by name M. Gajac, who was very largely interested in the Plum trade, and that he would at once write to him on my behalf. He did so, and in the course of a few days I received a most courteous letter from M. Gajac, offering to give me all the information I might desire. A lengthy correspondence ensued between us, and M. Gajac assured me it would be almost impossible to find a competent Frenchman able and also willing to come to Westbury, and even if such a man were found it would entail a very considerable outlay, and he gave me a courteous invitation to come and see the process on the spot myself. There is an old saying that when the mountain would not come to Mahomet, Mahomet had to go to the mountain, and so it seemed that I could not do better than adopt M. Gajac's very pleasant advice. So about the middle of August, as soon as I heard that the Plum season had commenced, I started off on my 500 miles' journey to the south of France.

About sixty miles from Bordeaux there falls into the Garonne a fine river, which, taking its rise among the mountains of Cevennes, follows a course of some 150 miles until its junction with the Garonne. The river is called the Lot, and the two rivers together confer the names on the department known as Lot and Garonne. For several miles along the lower reaches of the Lot, where it flows through a rich alluvial plain, and in the country immediately adjacent to the spot where it enters the Garonne, is grown the fruit which yields, when specially prepared, the product known as French Plums. For over 100 years the industry has been fixed in this locality, and still, with the exception of a valley in Servia, there is no other place where the same trees are cultivated on a large scale. The tree is called Prunier d'ente. *Enter* is an old word meaning to graft, and it is simply so called because this particular variety was formerly the only Plum in the district that was ever grafted. Now there are practically no Plums other than the Prunes d'ente grown in the neighbourhood. Higher up the Garonne round the old town of Agen, and in other parts of Southern France, other Plums are largely grown, such as the Prunier Commun, the Ste. Catherine, and others, and the fruit is treated similarly to that of the Prunier d'ente, but the produce is very inferior and only suitable for stewing; and, I believe, that nowhere else except in the Servian valley is the true Prune d'ente at present grown, though many experiments have been tried with other varieties. None have yet been discovered that will yield the best qualities of French Plums. It is rather capricious in its growth, for its area of cultivation does not extend very far from the river bank. It appears to delight in a deep alluvial soil of a rather sandy nature, but which contains a sufficiency of clay to make it very retentive of moisture. The centre of the French Plum district may be said to be at Clariac, a quaint little old-fashioned town built on a steep hillside overlooking the Lot, almost more Spanish than French, its houses shaded from the fierce southern sun with wide outspreading leaves and flower-clad balconies. Here I was most hospitably received and entertained by M. Gajac.

In this and the neighbouring communes the metayer system has long been in full operation, and it appears to work well and harmoniously. The owner of the land engages the metayer and supplies all the stock and implements required for the holding. He also keeps in repair the house and buildings. The metayer also finds the whole of the labour except such extra labour as is needed for the harvest. He has during the year entire control of the farm, and buys and sells, subject if required to the approbation of the owner. He renders account of all produce from the holding consumed by himself and his family, and at the end of the year the balance of profit is divided equally between him and the owner. During the last few years the metayers have fared badly. The phylloxera has devastated the vineyards, and sad it is to see acres and acres of land excellent for the growth of Grapes, but fit for little else, now deprived of those crops which, till recently, so well repaid the cost of cultivation. The holdings vary in extent from ten acres to fifty or sixty, and on every holding in the lowlands are to be seen rows of the *prunier d'ente*, separated from each other by long strips of cultivated land, where the mild fawn-coloured oxen lazily drag the most old fashioned and primitive implements over the easily broken soil. The Plums are long shaped, the stalk end being much the more pointed; the colour is red, deepening into a rich violet as the Plum ripens; the skin is extremely tough without being thick or hard; the flesh very firm, containing a large amount of saccharine; the specific gravity much greater than that of several varieties of English Plums with which I have made comparison. The tree is a very slow grower, requiring ten years to bring it into full bear, though I saw some trees of six years old which were favourably situated carrying a good crop.

The fruit matures slowly and is not ripe till long after all other fruit in the district—Apricots, Peaches, Green Gages—have been gathered. All the apparatus required for the process consists of trays, or claies, as they are called, and two or more ovens. The claies are made either of wickerwork or wood, and are round or triangular. They are deep enough to carry a single layer of Plums. The sides are high enough to allow of their being placed upon each other without crushing the Plums, when they are not in the ovens. Every morning each metayer looks over his trees, picks the fruit that is ripe, just before the flesh begins to soften. The Plums are brought to the homestead, placed one layer thick in the claies, which are first put for an hour or two in the sun or in a current of air, and then laid on the floor of the oven. These ovens, or "fours," are simply just like ordinary bread ovens; they are usually built in pairs, each one about 10 feet long and 4 feet wide inside, and are heated by simply burning a certain quantity of wood inside them. In some few places etuves, or kilns, are substituted for the "fours." These are closets of variable dimensions fitted with a small furnace from which flues pass under and up the side of the closet, and also with various appliances for holding the claies. There seems to be a preference for the fours, though the etuves are simple and more convenient in every way. When the fresh fruit is first put in the temperature should be about 100° Fahrenheit. In the course of a few hours the Plums assume a curious puffy appearance, and if the heat is too great they will burst, a result most carefully to be avoided. They are taken out of the oven, cooled, and again put in with the temperature at about 135°, again withdrawn and cooled, and this time the fruit is turned by placing an empty claie upside down over a full one, and turning them over together. They are again put into the oven, this time the heat being raised to about 170°. This operation is repeated until all the Plums are completely preserved. Some dry more rapidly than others, and they are picked out and placed in other claies as they are ready. The more slowly the whole operation is performed the better, and the oftener the Plums are put into the four the higher will be the quality of the product. When ready the Plums are sorted out into various grades according to the number (30, 40, 50, 60, and so on up to 130 or more) that it will require to weigh a French pound, for curiously enough the old measure is adhered to and not the more modern kilogramme. They are then put into sacks and carried each week, or oftener, to the markets. Here the merchants come and buy, paying prices varying according to the number of the Plums required to weigh a pound. Thirty to the pound would be worth about 120 francs the 100 pounds; 40 to the pound 100 francs per 100 pounds, and so on down to the very lowest grades, which are not worth more than 15 francs. The merchants convey their purchases to large, cool, airy warehouses, where the fruit is thrown into large bins. Women seated at long tables are then employed sorting it over again much more carefully than before. The various grades are then packed separately in casks and sent to Bordeaux, where the finer qualities are unpacked and neatly laid in baskets or boxes. The inferior grades are simply exported in bulk.

I traversed day after day a considerable area of the Plum district, and everywhere saw the same Plum trees growing and the fruit being treated in the same manner. Everywhere, too, I met with the same good-humoured courtesy. It is a primitive out-of-the-way place very seldom visited by strangers, and much wonder was often expressed at my having travelled so far to learn that of which they could hardly conceive that anybody should be ignorant. It is an interesting country, full of memories of the past, and it is curious to think that long years ago the whole district belonged for over three centuries to the English Crown. I said to one metayer that perhaps his ancestors and mine had been there once side by side together. "Ah, Monsieur," he said, "if they were I don't expect your ancestors and mine sat down very comfortably together." A very fertile country it is too, blessed with a glorious climate, and were not our time to day to be devoted entirely to fruit I could tell of many crops I saw there being cultivated, amongst which Tobacco holds a very prominent place.

The lessons I learnt were these, that it is very easy indeed to manufacture French Plums, but you cannot make a silk purse out of a sow's ear, and there is one proviso, which is that you have got the right fruit to deal with, but failing this it is perfectly impossible to make the higher grades of French Plums. Secondly, that we have not got in England the true *prune d'ente* or any Plum really nearly resembling it. However, I determined on my return to make the best attempt I could with our Westbury Plums. Unfortunately it was a most unfavourable season, for the fruit in England never ripened properly, and the continued absence of warm sunshine reduced to very small proportions the amount of saccharine—an ingredient most vitally necessary—so that the experiment was made under avowedly unfavourable auspices. I have at my brickworks at Mitcheldean a special kiln for burning pottery and terra cotta. This kiln has some points of similarity with a French fruit *etuve*, only much better. It is fired with a special gas produced on the spot, and the flame circulates in a hollow wall round the kiln, but never enters it. It can be cut off at any moment, and

the temperature regulated at will. Of course being made for terra cotta its shape and form is not convenient for drying Plums, but it afforded ample evidence that kilns built on this principle, but specially modified, would answer admirably for fruit-drying purposes. I tried several kinds of Plums, amongst others the Early Prolific, Blaisdon Red, Victoria, and Black Diamond, but every Plum I tried was deficient in all the three characteristics of the *prune d'ente*—toughness of skin, solidity of flesh, and abundance of saccharine. Some failed altogether, and even those which yielded a moderately fair result had to be treated with extraordinary care to avoid the bursting of the skin and consequent escape of the juice. They had to be put many times into the kiln, and the finishing temperature had to be arrived at very gradually ; and even then I unfortunately spoilt from a too high temperature several claiefuls of Plums, which I was preparing in an ordinary bread oven at Westbury. The Plum season was a short one this year, and unless picked quite green so many rotted before they were really ripe, owing to the damp and rain. So that with the time and means at my disposal I was only able to produce a very limited number of Plums. Those giving the best results were the Blaisdon Red, the Black Diamond, and the Victoria.

The deductions I should draw from my observations and experiments may, I think, be summarised as follows :—

1, That whilst we do not cultivate in this country at least the true *prunier d'ente*, nor any tree bearing fruit at all similar to it, it is very doubtful whether it would really succeed if introduced. In its native country, where the summers are longer, much warmer, and more reliable than with us, it is the earliest to bloom and the latest to ripen of all Plums. The department of the Lot and Garonne is about 450 miles almost due south of Reading, a distance sufficient to make a very material difference in climatic influences. M. Gajac, though he had never been in England, and could not speak a word of English, knew something of the valley of the Severn, and thought that the influence of the Gulf Stream on our western coasts and the daily influx of warm tidal water up the river might compensate for our more northerly latitude. That these influences do produce considerable effect is certain, but not sufficient to place us on anything like an equality with the district 450 miles nearer the equator. I have no doubt the trees would grow well and bear fruit, but I do doubt most extremely whether they would produce a fruit capable of conversion into a good quality of French Plum, though it would be capable of making very excellent pruneaux in most if not all seasons. I last winter had sent me from Orleans a dozen trees which were supposed to be the true French Plum tree. I did not then know as much about the matter as I do now, and I much doubt whether these trees are the right ones. They called them at Orleans Pruniers d'Agen, and I expect they really represent the Pruniers Communs to which I have referred. There are now being sent me from Clairac a score of the true *pruniers d'ente*, so that I may test experimentally whether they will thrive in our district. I may mention that at Clairac they always graft at the foot of the tree. They say the winters are so rough that there is much less chance of damage from the wind than if the graft were several feet from the ground.

2, That though none of our existing Plums will yield best French Plums, we can produce pruneaux, which are not without merit. Whether it would be a lucrative operation is not an easy question to answer. We have to bear in mind that it will require nearly 4 lbs. of our home varieties to make I lb. of pruneaux. In other words, assuming the value of the raw fruit to be Id. per lb., it would take 4d. worth of fruit to make 1 lb. of pruneaux, and I think this would have to sell at 5d. per lb. to make the manufacture profitable.

3, A factory could not be started solely for the manufacture of pruneaux, because the busy time would be so small a proportion of the whole year that it could hardly be rendered remunerative ; moreover the raw fruit would bear but little travelling, and so could not well be brought from any great distance. It has to be quite ripe and yet must not be at all bruised, and the skin must not be the least broken. A factory might encourage the erection and maintenance of ovens and kilns in different localities, and in fact the earlier stages of manufacture might be carried out in such localities themselves, and the process be subsequently completed at the factory. Such a plan would also have the advantage of extending the annual period of life at the factory. It might also be possible to store the raw fruit in cool chambers at the factory and dry it at leisure, but I doubt this. A factory in fact, to be successful, must embrace other operations beside drying Plums.

4, That the principle of the gas-kilns I have described is admirably adapted for fruit-drying purposes. Such kilns erected in pairs or in sets of four would not be costly, and would dry a great quantity of fruit. Not only Plums, but Pears and Apples, were dried abroad, and such work would have the advantage of coming in after the Plum season had expired. It is, however, I think, to individual growers we must look if any industry, such as French Plum manufacture, is to succeed. It is essentially an industry for small holdings, and no factory can itself carry out the work on a large scale, though it may materially assist in many ways. If it took no part in the manufacture it might well take the place of the merchant in France ; might purchase the Plums direct from the growers, grade, store, and market them ; but individual growers must take up the industry. If anyone possessing a suitable piece of ground for even fifty trees, giving them plenty of room for light and air, will plant *pruniers d'ente*, I am satisfied it will pay him well to make and use an oven ; and though he will probably not make "French Plums," he will certainly make most excellent pruneaux, and sell them at a good price. Whether the industry will succeed if simply applied to our native growths is a very much more doubtful point. The amount of extra trouble, care and attention the process will require in consequence of the fruit lacking the necessary characteristics will increase the cost of manufacture and reduce the value of the produce. I think myself that it is in other ways that we must look to dispose of the produce of our existing varieties of Plums, and for some at any rate of these ways a factory is probably an essential element of success.

CHRYSANTHEMUM SHOWS.

MARGATE.—November 21st and 22nd.

The Isle of Thanet Chrysanthemum Society has only been established two years, and by sheer hard work and excellent organisation the Society has made remarkable progress. The Exhibition held in the Hall by the Sea on the above dates was very satisfactory. The first prize for a group of miscellaneous plants arranged for effect went to Mr. Gosden, gardener to J. Atkinson, Esq., Albert House, Westbrook, for a fine group lightly arranged. Second, Mr. Roberts, gardener to T. Sebag Montefiore, Esq., East Cliff Lodge, Ramsgate, who ran the first group very close. Trained plants were arranged down the whole of one side of the hall. In the class for six specimen plants, Mr. Fairweather, gardener to W. Tarrett, Esq., Westgate-on-Sea, was first with fine plants of Mrs. G. Rundle, Pink Christine, and others. Mr. J. Cornford was a very good second, and Mr. Iles third. For a single Japanese specimen Mr. Fairweather was again first with a superb plant of Peter the Great. On the opposite side of the hall were the groups of Chrysanthemums arranged for effect. There were eight entries, and the competition most keen ; so close were the first and second that some difficulty was experienced in separating them ; the post of honour, however, fell to Mr. Cornford, gardener to H. P. P. Cotton, Esq., Quex Park. Mr. E. Bishop second, and Mr. F. Roberts third ; this group was bright and remarkably fresh. A grand group of cut down plants was staged by Mr. W. Jarman, gardener to T. Farmer, Esq., Chapel Hill, Margate, not for competition, attracted considerable attention.

The cut blooms throughout the Show were of first quality. In the class for twenty-four incurved flowers, Mr. Cornford was first with good blooms, including Golden Empress of India, Emily Dale, Jeanne d'Are, Pink Perfection, &c. Mr. Fairweather second, and Mr. J. Gaines third. For twelve incurved Mr. Fairweather came first with grand blooms of Empress of India, Cherub and Empress Eugénie. Mr. Cornford second. Mr. Fairweather was again first in the classes for six incurved and for three incurved alike, exhibiting three perfect blooms of Empress of India. The Japanese classes were well filled, and for twenty-four blooms Mr. Cornford was first with good blooms of Moonlight, Baronne de Prailly, Belle Paule, &c. Mr. Fairweather second with Comte de Germiny, Gloriosum and Grandiflorum. For six Japanese Mr. Fairweather was again first with the finest half-dozen blooms in the Show, amongst them being Madame C. Audiguier, Gloriosum and Grandiflorum. Mr, Cornford second, and Mr. T. Hunt third. In the open class for thirty-six blooms Mr. Skinner of East Sutton Park, Staplehurst, was first with grand flowers of Edwin Molyneux, Gloriosum, Meg Merrilies, Ralph Brocklebank, Mdlle. Lacroix, Mr. C. H. Wheeler, Lady Lawrence, Empress of India, Emily Dale, Bronze Queen of England, C. Gibson, and Mrs. Norman Davis. Messrs. W. Ray & Co. of Teynham were a good second.

Mr. Fred. T. Hart of Ospringe Road Nursery, Faversham, staged some grand blooms not for competition, the most prominent amongst them being Edwin Molyneux, Amy Furze, Mdlle. Paule Datour, Mir, Madame Pages, Martha Harding, Lady Lawrence, Florence Percy, &c.

The fruit and vegetables were of excellent quality ; amongst the prizewinners were Mr. F. Miller, Mr. T. Lake, Mr. A. Croucher, Mr. T. Cornford, and Mr. Barber.

WOKINGHAM.—November 21st and 22nd.

This small but flourishing Society held its fourth annual Show in the Drill Hall, Wokingham, on Tuesday and Wednesday, November 21st and 22nd. The show of cut blooms was good, several well-known exhibitors competing in the open classes. In the leading class for twelve incurved, distinct varieties, Mr. W. Lane, gardener to Miss J. D. Smith, King's Ride, Ascot, was first with a good even stand, very bright and fresh. Back row—Empress of India, Alfred Salter, Golden Empress, and Lord Alcester. Second row—Princess of Wales, Jeanne d'Are, Princess Teck, and Jardin des Plantes. Front row—Yellow Perfection, Angelina, Isabella Bott, and Lady Carey. Mr. Allen, gardener to Sir G. Russell, Swallowfield Park, was a close second ; Mr. Hughes, gardener to H. F. Paravicini, Heathfield, Ascot, third.

Mr. Lane was also successful with twelve Japanese, staging good blooms of the following varieties :—Back row—Madame C. Audiguier, Lady Trevor Lawrence, Belle Paule, and Gloriosum. Second row—Mr. H. Cannell, J. Délaux, Thunberg, and Madame J. Laing. Front row—Mr. H. Wellam, Criterion, M. Brunet, Mdlle. Lacroix. Mr. Allen was second ; Mr. Popple, gardener to Lady Stephney, Ascot, third. For six reflexed, Mr. Poppel was first ; Mr. Lane, second ; Mr. Hugbes, third. Groups were poor. Mr. Sinclair, gardener to the Marchioness of Downshire, Easthampstead Park, was first ; F. M. Weseott, Esq., second ; and Mr. Ashman, Billingbear Park, third

Messrs. Sutton's special prizes for vegetables brought a fine competition. Mr. Wilks, Holly Court, was first ; Mr Poppel, second ; and Mr. W. Townsend, third ; and Mr. W. Ball, fourth. Cyclamens were well

shown by Mr. Wilks. For six table plants Mr. Sinclair was first, Mr. Wilks second, and Mr. Ashman third.

A COTTAGERS' SHOW AT RYDE, ISLE OF WIGHT.—November 27th.

It is not often that cottagers have the honour of a show all to themselves. A few classes at the end of the schedule, and the exhibits placed in the most inconspicuous part of the hall, are the usual allotments to this section of exhibitors. The name of cottagers is often made a handle of in soliciting subscriptions to encourage the more general cultivation of the flower, but their blooms sink into insignificance when exhibited with the lions produced by some of our great exhibitors. Not so in Ryde. In the words of the Mayor of the town, R. Colenutt, Esq., when he opened the Exhibition on the above date—"Last year the exhibits of the cottagers were so numerous and so good that the Committee thought they merited a separate exhibition, and the results had justified the steps they had taken, for many of the exhibits would compare favourably with those shown by professional gardeners." The collections of Chrysanthemum blooms, the baskets of blooms arranged with foliage, and the floral designs were an exhibition in themselves, and some of the cut blooms were of good substantial quality, and showed good cultivation. For the best collection of cut blooms, Mr. H. Gatrell, Ryde, was first for a fine box of fresh blooms of excellent varieties, the back row being raised up very effectively; Mr. G. West, Oakfield, being second; and Mrs. H. Orchard, Ryde, third, with excellent lots. For twelve incurved, not less than six varieties, Mr. O. Dibbens was first with good but rather rough flowers; Mr. G. Attrill, St. Helens, second; Mr. G. Coombes, Swanmore, third; and for twelve Japanese, six varieties, Mr. O. Dibbens was again first, showing a good Val d'Andorre and Boule d'Or; Mr A. Wade, St. Helens, second; and Mr. Taplin, Ryde, third. For twelve blooms, distinct, any section, Mr. H. Gattrell was first; Mr. Attrill, St. Helens, a good second; Mr. G. Coombes third; and Mr. Young, St. Helens, was highly commended for a meritorious stand. There was not much competition for eighteen incurved, six varieties; and the second prize only was awarded to H. Gattrell. For six blooms, three varieties, Mr. A. Wade was awarded first, Mr. J. Taplin second, and Mr. J. Niblett, Niton, third; and for six blooms, reflexed, Mr. O. Dibbins was awarded first. The same exhibitor was also first for six blooms, any variety, with A. Wade second, and Mr. J. Woodford, Ryde, third.

The competition for the special prizes offered by Mr. Councillor J. D. Brook for the best basket of Chrysanthemums with foliage, was sufficient to fill the centre of the table the whole length of the hall. They were raised above the cut blooms on a covered board, and although some were too heavily packed with flowers, they, as a whole, were very effective, and the Committee were very thankful to accept the donor's offer to extend the prizes for their encouragement. Miss Orchard, High Park, was awarded first for a light sloping side basket, with the decorated handle carried well above the body. Second, Mr. E. C. Williams, Ryde; extra second, Mr. J. Niblett, Niton, and third, Mrs. E. Brading, Wooton Bridge; extra, Mr. C. Prince, Haven Street, and highly commended, Mr. J. Woodford and H. Gatrell. For the special prizes offered for the best floral device or design there were nine exhibitors, making in itself a very attractive exhibition, the majority showing great taste in the arrangement of colour, and ingenuity in the designs. Amongst the exhibitors two were by trade carpenters, one a blacksmith, and one a milkman, and much credit is due for their patience and skill displayed in their arrangements. The Committee again offered to extend the prizes in this class, which was merited. Mr. C. Kent, Haylands, was awarded the first prize for a design measuring 2 feet 10 inches by 3 feet 10 inches, the designs being a basket of Chrysanthemums, the basket made of yellow Chrysanthemums and the body and handle filled with coloured varieties. Around the outside of the medallion, formed of moss, was a motto and various ornamental scrolls made with Pompons and other Chrysanthemums. The second was awarded to Mr. G. Hayden, Haven Street, whose design was the dial of a clock very well done; extra second, Mr, C. Prince, with a star; third, Mr. G. H. Kent, Haylands; extra third, Mr. E. Salter, Swanmore; and fourth, Mr. F. C. Nunn, West Street. Messrs. C. Frampton and G. Stainer, Ryde, were highly commended for excellent designs, one using Holly berries in the device of the arms of the borough of Ryde. Mr. A. Wade, St. Helens, was the most successful exhibitor in the plant class, showing rather tall bushes with good heads of bloom, but the majority of the plants were too tall to be effective. There were also prizes offered for baskets arranged with berries, autumn foliage, and Ferns, but although very pretty they were not quite so good as was shown at the previous Exhibition. Messrs. H. Lipscombe, Haven Street, E. G. Brett, and Mrs. Kent, were the successful exhibitors. A fine stand of blooms put up in triples and exhibited by J. D. Brook, Esq., formed an attractive feature in the Exhibition, in which he takes an active part in conjunction with Mr. J. Eley, the Secretary, to make the Ryde flower shows a popular and successful gathering.

MANCHESTER.—November 27th and 28th.

The Exhibition, as usual, was held in the Town Hall, and the weather during the early part of the first day could not have proved more unsuitable. The Exhibition was not large; it was, however, very attractive. The schedule only comprised eleven classes, and these were well filled. Miscellaneous plants were numerous, and added materially to the effect of the Show.

Five classes were devoted to cut blooms, and they were well filled, but the blooms, with the exception of the first-prize collections, were below the average. For twenty-four incurved Mr. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was first with neat fresh examples of (back row) Empress of India, Alfred Salter, Lord Alcester, a sport of the last named being similar to Queen of England at the base and Lord Alcester towards the centre, Lord Wolseley, Golden Empress, Jeanne d'Arc, and Queen of England. Middle row—John Salter, Princess of Teck, Empress Eugénie, Prince Alfred, Princess of Wales, Beauty, Mrs. N. Davies, and Pink Venus. Front row—Jardin des Plantes, Lady Slade, Mrs. Heale, Cherub, Baron Beust, Mrs. C. Gibson, Eve, and Barbara. Mr. J. Carling, Woolton, was second with fair blooms rather open in the centre. Third S. Shirley, Esq., Withington, with much smaller blooms. For twelve incurved the first-named exhibitor was again first with blooms equal to those in the preceding class. Mr. J. Walker, Vernon Park, Stockport, second, and Mr. Goodacre, gardener to the Earl of Harrington, Elvaston, Derby, third. Four collections were staged.

For twenty-four Japanese Mr. Lambert was again first with fresh bright flowers of good size. The varieties were, back row—Japonais, M. Astorg, Ralph Brocklebank, Dormillion, Meg Merrilies, Gloriosum, Fair Maid of Guernsey, and Madame C. Audiguier. Middle row—Comtesse de Beauregarde, Criterion, Val d'Andorre, Avalanche, Jeanne Délaux, Madame J. Laing, Golden Dragon, and Mdlle. Lacroix. Front row—E. Molyneux, Album Plenum, Duchess of Albany, Belle Paule, L'Or du Japon, Hiver Fleuri, Carew Underwood, and Madame de Sevin. Mr. J. Carling, Woolton, was second with lighter blooms, and Mr. J. Walker and Mr. Goodacre equal thirds. Five collections were staged. For twelve blooms Mr. Lambert was again first with capital specimens, Mr. Goodacre second, and N. A. Earle, Esq., Kersal, third. The same number of collections were again staged. In the remaining class for the best collection of reflexed Pompons, Anemone, large flowering Pompons, and Japanese Anemones only two collections were staged, and the winners were J. Lamb, Esq., Bolton; and D. McClure, Esq., Heaton Mersey.

For the best collection of stove and greenhouse flowers only two collections were staged, but they were excellent, and the chief award fell to A. Heine, Esq., Fallowfield, who staged good bunches of a large number of Orchids on a groundwork of Adiantum freely intermixed with bunches of stove and greenhouse flowers, the effect being all that could be desired. Thos. Staller, Esq., was placed second with a choice collection of Orchid blooms. For one centrepiece suitable for table decoration S. Lond, Esq., Ashton Mersey, was placed first for a very light arrangement. For one bouquet Mr. A. Heine was deservedly placed first, and Mr. Goodacre second.

Chrysanthemum plants in pots were not so good as they are usually seen at Manchester. For nine large flowering varieties, N. A. Earle, Esq., was first with good examples of culture; H. Galbraith, Esq., second; and W. Leak, Esq., Alexandra Park, third. For six Japanese the same exhibitor was again first. For six Pompons, R. Hardwick, Esq., was first.

Mr. Gleeson, gardener to the Duke of Newcastle, Clumber, contributed twelve remarkably fine Pines, for which the Society's gold medal was awarded. Messrs. R. Smith & Co., Worcester, had a first-class commendation for a collection of Apples, and the same award went to Messrs. Dicksons, Limited, Chester, for seventy-four dishes of Apples. Messrs. Dickson & Robinson, Manchester, staged Cyclamen, Roman Hyacinths, and Heaths in capital condition. Messrs. Brown & Tait a very similar and equally praiseworthy exhibit, for which first-class commendations were awarded. Messrs. Clibran & Sons, Oldfield Nursery, Altrincham, staged cut Pelargoniums, and a collection of flowering and foliage plants, also a large collection of Chrysanthemums of various sections, a first-class certificate being awarded them for a sport from Criterion. J. Robino, Esq., had a first-class certificate for Lycaste Skinneri alba with three fine flowers. Mr. Mason, florist, Manchester, contributed wreaths, bouquets, and crosses; and Mrs. Barlow, Skimdda-hir Llandudno, a collection of flowers cut from her garden outside. The variety and freshness of the flowers for this season of the year were remarkable. Mr. Bruce Findlay sent from the Botanic Gardens a good number of plants, both flowering and foliage; most conspicuous was a group of Sarracenia Drummondi alba, which were in splendid condition.

ALNWICK.

The second annual Show of Chrysanthemums, fruit, and flowers in connection with the above Society was held in the Corn Exchange on Thursday last. The dimensions of the Exhibition in the department of pot plants showed a considerable falling off from last year, but this finds ample explanation in the lateness of the season, consequent on the want of sunshine which has characterised the last few weeks. Another unfortunate circumstance affecting local competitors in connection with this year's Show lay in the fact of its being held between a week and a fortnight earlier than it was last year, the result being that local growers, notably Mr. D. P. Bell of Clive House, had many plants not sufficiently matured to enter the competition. The exhibits were neatly arranged laterally around the hall, a stand also running lengthwise through the centre of the room. This central display consisted of cut flowers and fruit, the quality of which was not inferior to that of the exhibits shown in these two departments last year, and the aspect of the whole was exceedingly pretty. Vegetables were also good. Amongst the exhibits not for competition was a fine stand of plants by Mr. T. B. Morton, nurseryman, Darlington; a beautiful collection of cut blooms by Messrs. Ferguson & Munroe, nurserymen, Edinburgh; a splendid display of vegetables by Mr. J. T. Scott, Alnwick, and a numerous and

highly creditable exhibition of Apples by Mr. James Thomson, Shawdon. The hall was neatly decorated with plants from the Castle Gardens, under the supervision of Mr. Geo. Harris.

The following Committee have worked arduously for the success of the Show:—Messrs. M. Armstrong, J. Simpson, W. Bell, G. Harris, J. T. Stott, D. P. Bell, M. Swan. The duties of Treasurer were ably carried out by Mr. G. H. Thompson, and those of Secretary by Messrs. G. Simpson and J. Ferguson.

The chief prizes for plants were won by Mr. Paul Blanchard, Sunniford Park; for cut blooms by Messrs. J. Short, T. J. Wheeler, D. P. Bell, J. Pringle, and G. Shotton. For miscellaneous exhibits, fruits, and vegetables, the prizes were accorded to Messrs. Wheeler, Blanchard, Pringle, Finch, Bell, Oliver, Robson, A. McIntosh, Stott, and Logan.

ECCLES.—November 30th and December 1st.

This young Society held their second Exhibition in the Town Hall, and it was in every respect a very good one, and considerably in advance of the one held last year. The Committee increased the number of classes and prize money consequent on their first exhibition proving such a success financially. The schedule comprised forty-six classes, twenty being open to all, sixteen open to amateurs, and the remainder devoted to the members of the Patricroft Linnæan Society.

Cut blooms were more numerous and of better quality than we had expected to have found them. For eighteen blooms, half incurved and half Japanese, Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was the only exhibitor, and staged capital blooms of Gloriosum, Madame J. Laing, Fair Maid of Guernsey, Madame C. Audiguier, Mdlle. Lacroix, Criterion, L'Or du Japan, Madame de Sevin, and M. Astorg; incurved, Golden Empress, Queen of England, Lord Alcester, Princess of Wales, Alfred Salter, Jardin des Plantes, Princess of Teck, Mrs. C. Gibson, and a sport from Lord Alcester. For twelve incurved varieties the same exhibitor was again first with grand flowers of the sport from Lord Alcester, Queen of England, Alfred Salter, Empress of India, Jeanne d'Arc, Princess of Teck, Lord Alcester, Golden Empress, Barbara, Jardin des Plantes, Eve and Princess of Teck. Mr. J. Walker was second with smaller and flatter blooms, and A. N. Earle, Esq., third. In the corresponding class for twelve Japanese Mr. J. Lambert was again first with fresh, fair sized blooms of Baronne de Prailly, Jeanne Délaux, Fair Maid of Guernsey, Dormillion, Japonais, Criterion, Val d'Andorre, Madame J. Laing, Duke of Albany, E. Molyneux, Gloriosum, and M. Astorg. Mr. J. Walker was again second, and A. Knowles, Esq., third. For twelve blooms, six Japanese and six incurved, the winners were the same as in the preceding class. For nine blooms, three Japanese, three incurved and three Anemone, Mr. J. Walker was first, and also for six blooms of Anemones. In the amateur class for eighteen blooms, any variety, staged for effect, Mr. H. Huber was first, and Mr. W. Crawshaw second, both showing well. For twelve blooms, six Japanese and six incurved, Mr. Crawshaw again took the lead, followed closely by Mr. Royles. For six incurved Mr. Crawshaw was first, and also for six Japanese. For twelve blooms, half Japanese and half incurved, in the third section, Mr. H. Huber took the lead. For six incurved Mr. R. Johnson, and the same exhibitor was first for six Japanese.

Chrysanthemums in pots were considerably better than is the case at most exhibitions. Those in the open classes were all that could be desired, while those in the amateurs' sections were highly praiseworthy. For a group of plants, any varieties, arranged for effect, space not to exceed 9 feet by 6 feet, four groups were contributed. G. H. Leigh, Esq., was placed first with grand examples of culture; none of the plants exceeded 3 feet high, and many of them not more than 2, with dark healthy foliage to the base, the plants carrying six and eight good blooms each. N. A. Earle, Esq., was a close second with most of the plants equal to those in the first collection. Mr. W. Russell was placed third. For six plants, large flowering varieties, Japanese excluded, Mr. N. A. Earle was well first with excellent examples of Emily Dale, Queen of England, Mr. Bunn, Empress of India, Barbara, and Princess of Teck. J. Reddaway, Esq., was placed second with rather taller plants. For six Japanese Mr. N. A. Earle took the lead with well grown plants of L'Adorable, Elaine, E. Molyneux, and Val d'Andorre. In the corresponding class for six plants, three incurved, and the remainder Japanese, Mr. N. A. Earle was again first, and Mr. J. Reddaway second. For three Pompons Mr. Earle was again first with fair plants. For a group of miscellaneous plants arranged for effect, space not exceed 7 feet by 5 feet, Mr. Thos. Agnew, Eccles, was well first with the most tastefully arranged group we have seen for a long time. Mr. N. A. Earle was placed second with a very good arrangement. Table plants were very good, being light and of a suitable size for that purpose, Mr. J. Fountain was placed first. Mr. F. Reddaway took the lead for Roman Hyacinths, which were well shown. Mr. N. A. Earle was first, Poinsettias, good pots full, with fair sized bracts. Primulas were below the average, Mr. N. A. Earle was deservedly accorded the premier position. The same exhibitor was also first for Calanthes.

Miscellaneous exhibits were numerous and added largely to the attractiveness of the Exhibition. Messrs. Clibran & Son, Oldfield Nursery, Altrincham, staged several hundred blooms of Chrysanthemums, also boxes of Pelargoniums and miscellaneous collection of plants. Messrs. R. Smith & Co., Worcester, contributed a collection of Apples and Pears, about twenty-six dishes of fine fruit; Mr. Thos. Agnew, Eccles, a number of Crotons and Palms, large healthy plants; Messrs. Dickson, Brown & Tait, Manchester, splendid boxes of Roman Hyacinths, a few Cyclamen, and other plants; Messrs. Dickson & Robinson, Manchester, Erica hyemalis, Cyclamens, and small Palms; Mr. W. Grange, florist, Eccles, contributed a table of Grapes, Pines, Apples, Pears, and Mushrooms, intermixed with flowering and foliage decorative plants; Mr. J. Derbyshire, fruit grower, Liverpool Road, Patricroft, a collection of Apples.

It will be seen from the brief outline given that the Exhibition was a thoroughly representative one, and highly creditable to all who took part in its management.

HARDWOODED PLANTS AT CHELTENHAM.

Only those who follow out exhibiting week by week fully realise the great amount of hard work incurred by competitors. By continued practice, however, the anxiety is considerably lessened. The skilled exhibitor knows to a nicety what plants will be ready for this or that show on a particular day; whether this plant will need retarding, or that one pushing on, to be in condition at the right moment. Plants are judged upon their merits at the time they are viewed by the judges, and not what they were a week previous, or what they may be a week hence. From time to time, for years past, the writer has had many pleasant conversations with Mr. Cypher of Cheltenham, whose fame as an exhibitor is widely known in England. Those of your readers who frequent our larger exhibitions cannot fail to notice the clean, fresh, healthy appearance of Mr. Cypher's plants whenever seen, so of this I will say nothing, but turn briefly to the specimens on their return home, or in other words—"after the battle."

The collection of hardwooded plants grown at Cheltenham for exhibition purposes is, perhaps, one of the finest extant, many of the individual examples reflecting the highest possible credit on the cultural skill which has brought them to such perfection. Some of these plants, particularly the hardwooded Heaths, do duty at a series of exhibitions during the period in which they are in flower. In taking these from place to place they are of necessity subjected to a variety of change, both of temperature as well as in the supplies and the quality of the water which must of necessity be given them. Nothing is more conducive to making some of these fastidious Ericas present a sickly appearance than changes of this kind; and while a thorough knowledge of their usual behaviour under such conditions reduces losses to a minimum, yet plants, and particularly hardwooded Heaths, that have attained the age of thirty or even fifty years, will and do become unhealthy now and then, despite all attempts to the contrary. It is only those with keen judgment, decisive action, and an ever-watchful eye that can hope to become successful cultivators of such plants. One of the first steps taken by Mr. Cypher after the plants have done their season's work is to clear them of all their flowers, in itself a rest, if momentary, to the plants themselves. Though a tedious operation, this picking over the plants is soon accomplished by practised fingers, and the plants are again ready to make their new growth for flowering the next year. When it is known that some of these grand specimens are fully 6 feet high and as much through, it is obvious that they must when well flowered carry an enormous mass of bloom; and at any time they are well worth inspecting, for cleanliness, health and vigour are apparent with everything to which Mr. Cypher puts his hand. Some of the more prominent of these giant Heaths are E. Cavendishiana, E. depressa, E. æmula, E. ampullacea Barnesi, E. Iveryana, E. tubiformis, E. Aitoniana Turnbulli, E. Austiniana, E. ferruginea major, E. Parmenticriana rosea, E. McNabbiana, and E. Marnockiana. Most of the above are in fine specimen form, of a vigorous uniform growth, which tells its own tale. Some grand specimens of E. Cavendishiana are coming on, clean vigorous pieces, which in all probability will be seen in the first half of the ensuing year. These are but young examples, but they are excellent specimens, and serve to illustrate the means employed to keep a stock of fair-sized plants, for although there are giants, and it is known exactly when and where they will be needed, there are also quantities of admirably grown compact plants which present a freshness and vigour seldom seen.

Then there are Aphelexes, Phœnocomas, Acrophyllum venosum, a most difficult plant to manage, with Allamandas, Dracophyllum gracile, Statices, and others. Particularly noticeable was one fine example of the latter for its superb colour. Pimeleas, again, are here well done, and seemingly perfectly happy; a large piece of P. spectabilis was 5 feet through. It is specimens of this size that require really good judgment and every care to keep them in good health. Of Bougainvillea glabra there were some fine pieces splendidly flowered; but these, unlike many plants grown here, seem to take affront at being moved about, and soon take cold, so much so that the same plant will not do for two shows in successive weeks, as the majority of the buds fall off after the fourth or fifth day, no doubt the result of a chill at the roots.

Both Crotons and Ixoras are grown in large numbers of the best varieties. Mr. Cypher colours his Crotons in a way which always makes them conspicuous at exhibitions, and plenty of heat, full sun, close to the glass, and abundance of moisture are the lines worked upon. A severe system of pruning is always indulged in for both, and that as soon as the plants can be dispensed with; after this they are kept moderately dry at the root till they show signs of breaking, being encouraged the while by light syringings. Apart from this class of plants, many rare specimen Palms and Cycads are to be seen, and gigantic specimens too are some of them. A good deal of attention is given to Anthuriums, all the best kinds being grown. A. Cypheri may well be styled the prince among this group, but as yet it is barely

known. It eclipses all others in size, substance, and colonr. At present the stock is limited, hardly reaching half a dozen plants. Then when the visitor has had his fill of specimens of foliage and flowering plants, he will find abundant amusement, accompanied by a good deal of instruction if he will, by inspecting the Lælias, Cattleyas, Dendrobes, Oncidiums, Odontoglossums, Masdevallias, Lycastes, Cypripediums, and such like, which merit greater detail concerning them, but time and space forbid.—J. H. E.

ECONOMIC ENTOMOLOGY.

[Presidential address to the Highbury Microscopical Society, by James A. Forster.]

(*Continued from page 455.*)

An important element in the education of a farmer should he the teaching the use of the magnifying lens and the naturalist's habit of close and minute examination and accurate estimation of the facts he observes. Indeed, not only for the farmer is this teaching necessary, but I would urge that it, with a general teaching of zoology, ought to form a distinctive part of every boy's education. I mean that Natural History should not (as is now mostly the case where it is taught at all) be taught as an extra subject, but it should have a prominent place in the curriculum of every school, to he taught with as much regularity and earnestness as grammar or language. These, surely, cannot excel it as a means whereby to train the youthful intellect to habits of close, careful, and accurate reasoning, order, and patient attention. The study, properly directed, of God's creatures can hardly he of less value as a mental and moral training than that of a dead language, and must necessarily bear much more nearly on our daily life.

The insect kingdom—hy far the most numerous in species of any corresponding group throughout animal life—is, as you are aware, classified into some twelve or thirteen principal families. Each of these families sends its quota to the host of the insect marauders of our gardens and fields. Happily for us, each group also contains not only species, but entire families, whose object in life is to prey upon these pests, to hunt them down, to devour them in each stage of their life. Thus has Nature put a check upon their increase, without which the human race would quickly have been eaten out of the land. Without these natural allies, we should have been powerless to overcome these deadly if minute enemies—the more deadly, indeed, because of their minute size, which renders it so difficult for us to discover them till the mischief they cause is well-nigh irremediable.

It is, then, evidently of the first importance that we should acquire that knowledge which shall enable us to recognise our friends so as not to confound them in the wholesale destruction we attempt to hring about of our pests. As a first step towards this knowledge, it is to he observed that the Insecta—like the higher animal kingdoms—comprises groups of vegetable-feeders and of flesh-feeders. Now, it is amongst the former that are found those insects that cause the most serious losses to our various crops; while it is to the latter—to the predaceous and carnivorous class—that we are indebted for the keeping within hounds the enormous increase of the devourers of our fruit and food that would otherwise take place hy reason of the wonderful powers possessed by them of reproduction. It is thus, as in so many instances throughout life, that Nature provides, as it were, a natural balance of forces, and I would ask, What can we do more wisely than avail ourselves of Nature's own means of keeping in check the myriads of foes that would, if left to themselves, turn our fields and our gardens into barren wildernesses? Had our Hop-growers perceived the truth of this, and persistently and patiently fostered hy every means in their power the settlement in their gardens, and the increase, of aphis-eating insects, such as the Lady-birds (Coccinellidæ), they would have largely mitigated, if not entirely prevented, the almost incalculable losses they have suffered from the so-called "hlack hlights," which, instead, have become of increasing frequency during the past fifty years. The great loss caused by the ravages of aphides alone to Hop-planters and the whole community may he well hrought home to us hy the following facts and figures:—

In 1882 a serious hlight occurred throughout the Hop-growing districts of England, causing a reduction of the average production from 7 cwts. per acre to less than 1¾ cwt. Now, as in that year the Hop acreage was about 65,600 acres, the total yield of which was under 115,000 cwts. instead of 460,000 cwts., it follows that the loss on the crop was about 345,000 cwts., which, taken at the average price of Hops for the preceding twenty years (£7 7s. per cwt.), amounts to over £2,500,000 sterling loss in that year to the cultivators alone. But it was not they alone who directly suffered for it. It is estimated that not more than £150,000 was paid that season for the picking of the crop, while had it been an average one, the cost of picking would have amounted to nearly £400,000. So nearly a quarter of a million sterling was lost to the labourers in that one season. What an amount of misery is expressed in these figures!

A few facts concerning our Apple orchards may further serve to justify my claim for the economic importance of my subject. There are in England, according to recent agricultural statistics, at least 250,000 acres under fruit cultivation, of which by far the larger part is occupied by Apple orchards, forming a very important item in the crops of many districts in Devon, Somerset, Herefordshire, and Kent. Now, the Apple, amongst its many enemies, suffers from the attacks of two little moths and their caterpillars—the small Ermine moth (Hyponomeuta padella) and the Codlin moth (Carpocapsa ponomella). The former, in the years 1865 and 1887, entirely devastated whole orchards throughout Kent and also the West of England. Hundreds of acres of orchards were to be seen in the month of July of those years without a leaf upon them—as bare, in fact, as though in midwinter. Every leaf, every bud, every blossom, had been cleared off by innumerable swarms of Ermine moth caterpillars, which had not only entirely destroyed the crop for the season, but had so seriously injured and weakened the trees that they produced but very small and poor crops in subsequent seasons. Again, in 1880, much damage was done by the same insect.

In 1877, the second of the above-named moths, the Codlin moth, caused much mischief to the orchards of Kent, where, it was estimated, about thirty per cent. of the Apples fell immature by reason of the maggot having penetrated to the core. And, further, it was found that a large portion of the fruit that did ripen would not keep from the same cause. As this moth specially attacks Pippins and the choicest descriptions of dessert Apples, the pecuniary loss to the growers must have been very large; but as there are no official statistics it is not possible to estimate the amount. In the cider-producing districts, the destruction of half the crop, which frequently takes place through the ravages of these two insects, must represent a very heavy loss to the farmers. Very frequently the above mischief is attributed to the weather, to the east wind, to that all-embracing word when used by the gardener, "Blight;" but if the observers would look closer and more accurately the true enemy might easily he discovered. When a gardener, seeing one of his trees with all the leaves shrivelled up, drawn together, and enveloped, as it were, in cobweb, with the blossoms falling off before mature or not opening at all, tells you in a mysterious manner that there is a "blight in the air" or that the tree is "struck," he is only confessing his ignorance and want of observation, and consequent inability of taking such precautions as shall render a recurrence of the misfortune unlikely or at any rate less severe.

The limits of this paper and my lack of knowledge alike render it impossible for me to attempt more than to describe a very few of our insect foes; but these that I shall now mention will serve as a sample of the rest, and the consideration of their life-histories will, to some extent, indicate the methods of observation necessary for their study. As I have already said, each of the great insect families contributes its quota to the devastating army. Certain families—notably, the beetles (Coleoptera), the bees, wasps, ants, &c. (Hymenoptera), the ephemeras, dragon-flies, &c. (Neuroptera)—send us friends as well as foes; others, like the aphides (Homoptera) are unmixed evils. The aphides, are perhaps, the most terrible and dangerous of all our scourges, and one of the most difficult to overcome, their amazing power of increase being unequalled throughout the animal kingdom. There is scarcely a plant that is not attacked by them, nor a locality where they are not to be found in numbers, and, under their popular name of "blight," dreaded by all gardeners and cultivators. At first sight it would hardly seem that they could be worthy of much attention. Their round, short bodies, nearly all belly, are carried on the frailest of legs; their habits are so sedentary that they seem intended to remain stationary; where they are born, for the most part, there they live and die, without giving any evidence of the instinct so frequently met with in insects. Their lives might almost be described as vegetable. Yet their organisation is most singular, and their fecundity in certain seasons so prodigious as to make them a real scourge. They infest every kind of tree, plant, or flower. The rarest flowers in our hothouses and the commonest flowers of the hedgerows alike serve them for home and food; in short, they are of all climates and all seasons.

They are both oviparous and viviparous. Their eggs, fixed to the plants by a viscid secretion, have the appearance of little, black, oval, shiny grains, deposited irregularly in large numbers on the sheltered side of branch or leaf. The young larva when extruded from the egg is nearly of its full size, and presents but little difference in appearance to the perfect insect. It emerges from the egg by a sort of trap or cover, and falls out backwards. Shortly after their birth, the young aphides work their way on to the tenderest and greenest part of the plant on which they find themselves. They crowd close together, their heads usually pointing to a common centre, and fix themselves by means of the large beak with which their mouth is furnished, and through which they incessantly suck up the sap of the plant, exhausting it and causing strange excrescences like galls, and in the end the plant becomes deformed and ruined. When three days old, the larva changes its skin; this is repeated three times at similar intervals. For the greater number, these metamorphoses produce but little change in appearance beyond a small tail, which develops at the end of the abdomen. When about nine days old, the female aphis (conditions of food and temperature being favourable) begin propagating their species by giving birth to living larvæ without having had any connection with the male. This has been described by Professor Owen as follows—

"This larva, if circumstances of food and warmth be favourable, will produce a brood—indeed, a succession of broods of larvæ—like itself without connection with the male. In fact, no winged males will have appeared. If the virgin progeny be also kept from any access to the male, each will again produce a brood of the same number of aphides, and carefully prosecuted experiments have shown that this procreation from a virgin mother will continue to the eleventh generation before the spermatic virtue of the ancestral coitus has been exhausted."

In favourable seasons, a certain portion of the third and fourth of these viviparous generations undergo special changes. At the first moulting small processes are observed on the back. These at successive moultings become largely developed, and after the fourth and last change of skin appear as large, fully formed, transparent wings, on

which the insect can fly away to fresh fields and pastures new. These winged aphides produced during the summer are always females. When two or three days old they take their flight to found new colonies. After the fourth generation, no further winged females are produced.

Towards the end of autumn the generations, usually eleven in number, approach their close, and the last brood produces a certain number of winged males, who fly off in search of partners. Reproduction then follows its normal course. The females, after marriage, give birth to no more living larvæ and produce only eggs. These remain during the winter protected by impervious shells from the cold, which would destroy the soft larvæ. In the spring these are hatched, producing larvæ as already described, who in their turn repeat the viviparous generations.

This is a brief outline of the life-history of the aphis family, which contains many species, many of them only too well known to most of us, like the Hop-fly (Aphis humuli). There are various species peculiar to certain fruits and plants. Indeed, each fruit seems to have its special aphis. Thus we have the Apple aphis (A. mali), the Plum aphis (A. pruni), the Currant aphis (Rhopalosiphum ribis), and many others. Mr. Whitehead writes of the Apple aphis :—

"The Apple aphis, or green fly (by which appellation it is better known), derives its food solely from the juice of the leaves and blossoms. It makes its appearance as soon as the buds begin to swell and the leaves show signs of coming forth, and it follows up the blossoms from their earliest development. The aphis attacks the blossoms, being specially attracted by their saccharine qualities, and either prevents the process of fructification or so besets the tiny fruits that, weakened by the extraction of their juices and begummed with viscous honeydew, they are unable to set properly. The fruit that perchance survives rarely attains to full size, shape, or quality. As the leaves come out, their under surfaces are occupied by the aphis, and soon curl up, get black, and fall off, leaving the trees bare, and emitting a sickly smell from all sides."—(*Journal of Microscopy.*)

(To be continued.)



FRUIT FORCING.

Figs.—*Earliest-forced Trees in Pots.*—The trees in houses closed in November with fermenting materials in the pits will now or soon be showing growth by the swelling of the terminal buds. The roots also that were cut back will under the influence of genial heat be sending forth fresh feeders through the fresh compost placed about the pots. When this is the case the fermenting materials should be examined, and if the heat does not exceed 75° they may be trodden down round the pedestals and bases of the pots, preparatory to the introduction of a fresh supply from the reserve heap, which should be under a roof of some kind, as the heating and manurial value is soon lost by exposure to drenching rains. At any rate, all material used for bottom heat or plunging purposes must be properly worked and warmed before being taken in. Take care that the heat about the pots does not exceed 70° to 75°. The heat and moisture given off by the fermenting materials will greatly facilitate forcing operations by softening and reducing the amount of fire heat. On cold nights the temperature should fall to 50°, and 55° by artificial means in the daytime will be sufficient, with a rise of 10° from sun heat. Syringe the trees and walls with tepid water on fine mornings and again early in the afternoon, or about 2 P.M., but with the moisture arising from the fermenting materials there will rarely be need of more until the trees begin to push fresh foliage. Keep the glass clean and free from condensed moisture by ventilating on all favourable occasions.

Succession Houses.—If the pruning is still in arrears lose no time in getting the work finished. Cut back or entirely remove all old spurs, and thin out the least promising shoots that have reached the extremity of the trellis to make room for free growth and full development of wood and foliage. As the Fig delights in heat, moisture, and good living, with plenty of light and a free circulation of air, the house should be well heated, be light and well ventilated, and generous treatment accorded, otherwise it is the most insipid of fruits. Thorough cleanliness is necessary to success, therefore spare no pains in cleansing the trees, woodwork, and walls, and paint if necessary. If brown scale has been troublesome syringe with petroleum at the rate of a wineglassful to three gallons of water, keeping it well mixed with the water whilst it is being applied. If applied with a brush it may be used much stronger, or at the rate of a wineglass to a gallon of water, at which strength it will destroy all insects it comes in contact with.

Peaches and Nectarines.—*Earliest House.*—The blossom buds will now be swelling. The house having been closed at the middle of November the temperature should be slightly increased in the day time, especially when the weather is mild or marking 50° outside and a soft wind blowing. Turn on heat in the morning so as to raise the temperature to 55°, and allow a rather free circulation of air, and with sun the temperature may rise to 60° or 65°, the heat being turned off at night to allow the temperature to fall to between 45° and 50°, and on cold nights it may fall 5° lower without any disadvantage. Avoid a dry atmosphere, especially from fire heat. Gently syringing the trees is of great benefit. If fermenting materials have been introduced give a little extra attention in turning and additions, which will impart activity to the surface roots. When the soil is at all dry give a good application of tepid water, or if the soil has left the walls, as it sometimes does, during the resting period, it should be well rammed down to make the water enter by the surface, otherwise it will run off.

Succession Houses.—Complete the pruning and cleansing in houses intended to be closed soon or at the new year. Lay in the wood sufficiently thin to admit of the full development of the foliage, as fine fruit of good colour and flavour cannot be obtained when the young wood and leaves are deprived of the benefit of light and air. Keep all doors and ventilators open in all but actual frost. Even this will not do any harm; but structures of this kind are often filled with plants, and in the anxiety to save these the lights are frequently closed when they should be open, and imperceptibly, but surely, the buds will swell, so that between alternate excitement and its opposite they receive a check, and if the trees do not cast the buds the flowers are weak and set very badly. It would be much better to remove the roof-lights altogether and keep them off until the time arrives for closing the house. No frost will injure the trees provided the wood is ripe.

Cucumbers.—Keep the night temperature steady at 60° to 65°, and the day at 70° to 75°, being very careful in the admission of air, though a little should be given to clear the glass of condensed moisture and admit all the light possible. It is hardly necessary to point to the desirability of preventing the temperature being unduly lowered by frequently opening the door in severe weather, which may be obviated by having the thermometer in such position that it can be seen from outside. A mat suspended over the door is also useful in preventing an inrush of cold air when the door is opened. Remove all superfluous fruits from the plants immediately they show, and tie up all shoots to the trellis as they require it. Encourage vigorous growth, on which stopping should be moderately practised, otherwise very little stopping will be required. Should mildew appear, dust the affected leaves with flowers of sulphur and maintain a somewhat dry atmosphere. For red spider sponge with softsoapy water, and if green or black aphides attack the plants, dust with tobacco powder; or, if fumigation be resorted to, it must be done with great care and judgment.

Prepare some Oak or Beech leaves with a third of stable dung by throwing them into a heap and damping if necessary, turning them when they have become warmed through outside to inside, and watering if necessary, so as to secure an even and thorough fermentation of the materials, with which to make a hotbed at the end of this month or beginning of the new year to raise Cucumber and Melon plants from seed, and subsequently to make beds for planting them in.

THE FLOWER GARDEN.

Own-root Roses.—Readers of the *Journal of Horticulture* will have learnt that to be successful with dwarf Roses these must either be on the Briar stock or on their own roots. The latter are preferable in many instances as being the least trouble to raise, and those who have a good stock of healthy bushes, standard or wall trees, ought to be able to take off many dozens or even hundreds of cuttings without injuring their plants in any way. There are a few varieties that fail, notably those with many thorns, but as a rule the majority will, if the work is properly done, strike readily and form good flowering plants during the following summer. The cuttings ought to be put in at once, and the first proceeding should be to prepare the ground, as the sooner the cuttings are inserted after they are made the greater the probability of their striking. If they are once allowed to become dry or shrivel in the least, failure to strike is almost certain. Preference should be given to a good open piece of ground, and the top spit should have a liberal addition of old Mushroom bed manure or leaf soil, and either road grit or sharp sand. This ought not to be buried with the spade, but should be well mixed with the surface soil with the aid of digging forks. This should be done only a short time before the cuttings are ready, as it is of importance that these are inserted before the newly moved ground has become saturated by rains. It is the long well ripened growths that are most suitable for making into cuttings. They should be cut into 1-foot lengths, the lower half being cleared of thorns and buds, and the base cleanly cut to a joint. Each variety ought to be kept separate and labelled. When a good number have been prepared, first trample or firm the ground somewhat, and then cut out a narrow trench, as if for laying Box edging, and about 6 inches deep. Set the cuttings from 6 to 9 inches apart in this, taking care that all are pressed against the bottom, return the soil, and well fix it against the cuttings with the foot. Another trench may then be cut with the spade from 12 to 15 inches from the first, and in this way a good breadth of ground may quickly be covered with Rose cuttings.

Last winter fully one-half the cuttings inserted failed to strike, owing to the ground being frequently upheaved by frosts, looseness of the soil about them being fatal to a good strike. In order to obviate this difficulty spread not less than two inches of fine coal ashes or cocoa-nut fibre over the surface, and if this does not quite prevent upheaval, firm the ground with the feet as often as the cuttings are found to be loosened. The more vigorous of the Teas and Noisettes may be struck in this manner, these including Maréchal Niel, Gloire de Dijon, Madame Berard, Catherine Mermet, Souvenir de Paul Neron, Safrano, Homére, Madame Lambard, Céline Forestier, Adam, and Souvenir d'un Ami.

The very useful Bourbon Souvenir de la Malmaison strikes readily, and so also does Baron Gonella, Cheshunt Hybrid, and La France, which also might safely be classed with the Hybrid Teas, rarely fail to strike, and are among the best that can be grown. All the Hybrid Perpetuals should be tried, but it is useless to attempt striking cuttings of Moss Roses.

Ordering Roses.—In many districts it is advisable to commence planting Roses at once, and in any case no time should be lost in ordering what are required from the nurseries. If they cannot be planted directly they are received they will not be injured if kept laid in thickly by their heels—that is to say, with their roots covered with fine soil, till they can be properly planted. Where dwarf or other Roses are liable to be killed to the ground or to the snow line by extra severe frosts the bushes ought to be ordered, and when received be laid in closely till early next spring. Being kept well together they can readily be protected when necessary by either strawy litter or bracken, and will form many root fibres before they are disturbed again.

Selections.—*Hybrid Perpetuals.*—The following may be grown for all purposes, either on dwarf or tall Briar stocks, or on their own roots—Abel Carrière, Alfred Colomb, A. K. Williams, Baronne de Rothschild, Beauty of Waltham, Boule de Niege, Captain Christy, Charles Darwin, Charles Lefebvre, Countess of Oxford, Countess of Rosebery, Dr. Andry, Duke of Wellington, Duchess of Connaught, Duke of Edinburgh, Edouard Morren, Emily Laxton, Empereur de Maroc, François Michelon, Général Jacqueminot, Her Majesty, John Bright, John Hopper, La France, Madame Gabriel Luizet, Madame Prosper Laugier, Madame Thérèse Levet, Mdlle. Eugénie Verdier, Mdlle. Marie Rady, Marie Baumann, Maurice Bernardin, Merveille de Lyon, E. Y. Teas, Prince Camille de Rohan, Senateur Vaisse, Ulrich Brunner, Violet Bouyer, and Xavier Olibo. The foregoing is a rather long selection, but it does not exhaust the list of varieties worth growing.

Bourbon Roses.—Of these the best are Acidalie, which succeeds admirably against walls; Baron Gonella, Queen of the Bourbons, and Souvenir de la Malmaison. All are suitable for planting against walls or in the open, and Queen of the Bedders, one of the most floriferous Roses in cultivation, Garden Favourite and Malmaison Rouge are also worthy of a trial.

Tea-scented and Noisettes.—As a rule the majority of these succeed best against sunny walls and fences, but many of them do well either as dwarfs or standards in the open. Even the old Gloire de Dijon and Maréchal Niel frequently form fine floriferous heads on tall Briar stocks. Some of the best of the Teas are Alba Rosea, Anna Ollivier, Catherine Mermet, Climbing Devoniensis, Duchess of Edinburgh, Etoile de Lyon, Gloire de Dijon, Grace Darling, Isabella Sprunt, Madame Berard (good for walls), Madame Falcot, Madame de Watteville, Marie Van Houtte, Niphetos, President, Reine Marie Henriette (for walls), Souvenir de Paul Neron, Souvenir d'un Ami, Sovenir d'Elise, The Bride, Sunset, Adam, Comtesse de Nadaillac, and Rubens, the three last named being the least hardy in the selection. Of the Noisettes Céline Forestier will do well either as a standard or against a sunny wall, and Jaune Desprez, Madame Caroline Kuster, Maréchal Niel, and Rêve d'Or, Triomphe de Rennes, and William Allen Richardson all quickly cover walls or pillars, and as a rule are very floriferous.

Other Roses.—*Moss Roses* succeed either as dwarfs or standards, and the most reliable are Baronne de Wassenear, Captain Ingram, Common, Comtesse Murinais, Lanei, Reine Blanche, and White Bath. The foregoing are summer flowering only, and those of a perpetual character worth growing are Eugénie Verdier, Blanche Moreau, Perpetual White, Soupert et Notting, and Salet. The *Hybrid China* and *Hybrid Bourbon* Roses are all suitable for covering pillars either against dwelling houses or in the shrubberies. Some of the best are Blairi No. 2, Brennus, Charles Lawson, Coupe d'Héhe, Paul Perras, Paul Ricaut, and Vivid. The white and red varieties of Rosa rugosa are very effective in the front of shrubberies, and these may either be grown as half-standards or as bushes. *Single Roses* are becoming very popular. A selection of these ought to include the copper and yellow Austrian Briars, the Persian Yellow, Paul's Crimson, and White Perpetual, Polyantha, and Macartney Simplex. The old *China Roses* are also still worthy of culture, notably Cramoisie Supérieure, Mrs. Bosanquet, Old Plush, and Old Crimson. The white and yellow *Banksian Roses* are suitable for planting against the sunny fronts of houses and for covering pillars. They are evergreen and beautiful when in flower. For north or cold walls such strong climbing Roses as Amadis, Dundee Rambler, Felicité Perpetuée, and Rampant are suitable. The *Miniature* or *Fairy Roses* are best adapted for pot culture, but Lawrenciana rubra, White Fairy, and Alba will succeed in the front rows of Rose borders.

KITCHEN GARDEN.

Forcing Asparagus.—We cut our first dish of this favourite vegetable on November the 24th. The produce was ready for cutting in twelve days after the roots were placed in the forcing quarters. It is an easy matter to secure plenty of Asparagus in winter where the crowns are well developed and abundant, but these two conditions are absolutely necessary. Roots that have been well grown for four or five years force freely, but a hotbed and frame are not the best appliances to use in forcing at this season nor until the spring. Our forcing place is not very elaborate; it is a low pit with a bed in front, a stage at the back and a pathway in the middle, heat being supplied by a flue which goes under the bed in front but is exposed along the back, the former giving the bottom heat and the latter the surface warmth, and it is here we are now cutting Asparagus. The roots are lifted without breakage and packed as close as they will stand in the bed with a little soil under them and as much over them as will cover the crowns. Water to make the soil moist, keep it in this condition and the bottom heat ranges from 75° to 85°. For maintaining a supply place in more roots as soon as the heads from the preceding are ready for cutting. It is fully exposed to the light from the first and grows as if it was in the open air.

The Mushroom Supply.—If good Mushrooms can be gathered daily or every other day, they will scarcely fail to meet with acceptance in the kitchen and on the table. A large bed formed in a potting shed in October is now producing multitudes, and will continue bearing until after Christmas, as the heat in it now is 79°, not 10° less than when it was spawned, and so long as this can be maintained Mushrooms will be produced. For retaining heat the beds should be about 18 inches in depth, and very firm. In making up new beds let the manure be moderately dry, turn it frequently to allow the surplus moisture to escape, then press the material into a firm mass.

Kidney Beans.—Of late we have had much rain and little sunshine, damp and dullness predominating, and these are conditions not favourable to the success of Kidney Beans in pots, and to secure pods throughout December the temperature must be kept at 75° or 80°, not less than the former, and the plants should be kept moist at the roots, but a damp atmosphere must be avoided. Sow seed to produce plants that will bear about the end of January.

Forcing Seakale.—Seakale does not force so freely as Asparagus. It requires upwards of four weeks to be ready by Christmas. Select the strongest crowns to force thus early, planting a number of them in a 10-inch or 12-inch pot. Eighteen or a dozen pots will give a good supply. A hotbed made in the Mushroom house or a dark shed will be suitable for plunging the pots in up to the rim. Pots may also be placed on hot pipes or a flue, but the growth must be made in total darkness, as green Seakale is not good. If placed in any warm place with the pots exposed, much water will be required, but when plunged very little suffices. The time has not arrived when the crowns can be forced with advantage in the ground.

Forcing Chicory.—Forced Chicory is one of the most valuable winter salad plants we possess; the roots are Carrot-like in form, and if dug up, potted, and plunged with the Seakale they will soon produce a large quantity of creamy, crisp leaves that will be much relished as salad. Cold frames containing Lettuce, Endive, Cauliflowers, &c., are now very damp, and should be ventilated freely on every favourable opportunity.

PLANT HOUSES.

Adiantum cuneatum.—When the whole of the fronds that are suitable for cutting have been removed from these plants place them in a temperature of 50°, and keep the soil rather dry side at their roots. Do not place them in a lower temperature, or they will fail to start freely into growth afterwards. They will rest under the conditions advised and be ready for a good start again early in January. Do not keep plants still growing in a temperature above 55°, and admit air when the weather is favourable. Fronds from plants grown on this principle will last double the time in a cut state, as would be the case if they were grown in a warm confined atmosphere. Keep young plants in 60's steadily advancing, so that they will be ready in a month or six weeks for placing into 5-inch pots. These will yield useful plants for decoration or cutting by April.

Scented Pelargoniums.—Where the foliage of these are appreciated in a cut state watch carefully for aphides, for they are very liable to attack these plants at this season of the year. If the plants are subjected even to light fumigation with tobacco the foliage will turn yellow. The best means of eradicating aphides without injury to the plants is to dip the parts affected directly the insects are seen in a weak solution of tobacco water. Avoid cutting out the tops of a number of plants, for they will continue growing in a temperature of 55°, and will yield suitable leaves in succession for use in small vases. Keep plants from which all the growth has been removed rather dry.

Cypripedium insigne.—While this plant is doing duty in the conservatory be careful not to give too much water. Do not stand the plants in draughts or crowd them. To show the flowers to advantage let the plants be slightly elevated above surrounding objects.

Bouvardias.—As these cease flowering keep them on the soil with their roots rather dry to induce complete rest. Many are lost after flowering by being kept too wet. The object now is to rest thoroughly those that have done service, so that they will be ready for starting early to yield strong robust cuttings for next year's stock.

Zonal Pelargoniums.—Where these are employed in conservatories many will cease flowering during the present month. Select the best shaped free-flowering varieties, and place them on a shelf close to the glass where they can be kept in good condition for the present without growing. With gentle heat after the turn of the year these will soon flower again. Plants not required for this purpose may be kept dry at their roots until the middle of January, when they can safely be pruned and started again into growth. Water plants in flower with care, and keep the atmosphere of the house dry. Weak stimulants may be given every time water is needed.

Heliotropes.—To keep these flowering freely they must have a temperature of 60°. Plants that have been employed up to the present in a temperature 10° or 15° lower will show signs of discontinuing growth. If these are removed at once to the temperature advised above they will soon grow and flower freely again.

THE BEE-KEEPER.

WINTERING BEES.

As no one year is sufficient as a test for the safe wintering of bees, it will be well for bee-keepers to keep a sharp eye on their hives, so as to be able to detect any dead bees, and to discover the cause. Damp is the worst enemy bees have to contend against during inclement weather. When a floor is damp many bees perish on it, and in any case damp causes a coldness detrimental to the bees. Frequently we hear of clusters of detached bees being found in the hive, as well as the floor being covered with dead bees. I never had a case of either in my apiary, but I may perhaps be able to point out a few of the causes.

A projecting alighting board catches damp, and if it form a piece of the floor the damp is drawn inwards and the bees and combs, as well as the honey, suffer. Impervious coverings either next the bees or close on the top of other material on the hives also causes damp through condensed moisture. Too much doorway when the atmosphere is damp with a low temperature is also unfavourable. Bees located in a hive that is broader than high suffer when a low temperature occurs, and detached clusters of bees die. Double-cased hives that are dovetailed contract damp readily, more so than those nailed with a close-fitting joint. Wood or other material that absorbs damp next to the bees is worse for them than when a non-porous material is used. Wooden hives are better oiled, painted, or tarred on the inside, than left so as to absorb damp, provided a ventilating floor is employed, and with a doorway not more than an inch wide and in a narrow hive bees will winter well and come out in the spring in good health, no matter what the winter has been. The "Long Idea" or other lateral hives on the broad principle contract damp much more readily than the narrow type of hive. The honey from them, too, during summer is always more watery than the honey stored above the bees is in a narrow hive, while in winter it is both colder and more watery and causes disease amongst the bees, while those in a narrow hive are healthy.

The best way to protect hives from rain and inclemency of the season is to have the sides, and particularly the top of the hive, well covered with dry meadow hay and surmounted with a projecting rain-proof roof, elevated a little, so that it acts as an umbrella does, allowing the air to pass around and over the hive without the possibility of rain entering or touching the hive anywhere, and always have the alighting board detached or moveable, so that it will not conduct water to the interior. The proper quantity of hay to employ is just as much as when pressed by the hand it will feel soft and the perceptibility of the wood absent. Bees cannot have a too ready entrance to their combs. Those having a court between the outer and inner wall is the cause of the death of many bees, as well as intercepting the air before it reaches the outer world. Such hives necessitate close watching and a hooked wire to draw out the dead bees. Hives having their combs right to the doorway may be termed safe, as the bees when "airing" come to the entrance in a body, keeping the combs and entrance warm, so that bees returning almost exhausted (as they often are in winter), when they reach the entrance and catch hold of the combs are safe.

The foregoing are some of the features the bee-keeper should become acquainted with, and when the wintering of bees is mastered, the management during summer becomes more simple, ending in success. For two weeks now my bees have kept constantly within the hives. Last year at the present date some of the Syrians had a number of dead thrown out, and had been prisoners for two months this year. No dead bees are around yet, and should seasonable weather continue for another three weeks breeding will be commenced. On the 9th of January, 1888, one of the finest days during the year, the bees began work and continued until dusk the same day, and wrought more or less up till the 18th November. Never, in all my experience, have queens been taxed to such an extent as in the present year. The bee-keeper should turn his attention to all stocks having 1887 queens, for assuredly there is a likelihood of many of them being deposed before swarming time.—A Lanarkshire Bee-keeper.

THE "HALLAMSHIRE" GLASS SECTIONS.

"A Sussex Amateur," page 458, wants to know how the above can be fitted together and placed in the racks ready for use in less time than the present wood sections, and he would like me to supply the 4000 pieces of glass for 10s. To explain the first will require some drawings and several columns of letter-press; in fact the glass sections are only part of a new system that bears about the same relation to the present bar-frame principle that the latter does to the skep. If your correspondent will refer to the Journal for November 1st, he will see I have promised to publish full particulars, but I do not consider it wise to do so just yet when everyone is sceptical about the plan. When a goodly number have realised that they can be done, and are willing to learn the process, then will be the time to instruct them. Before this can happen we must break down the opinion that "the idea of glass for sections is absurd—a thing as impossible as perpetual motion." This brings me to notice a leading article in a contemporary for November 1st. I sent a reply to it which dealt with every one of his objections against glass, but it was not published. You, Mr. Editor, who have seen the whole crate, can testify that it was a fair sample, and not the best one either, therefore I feel constrained to deal with the objections here.

The first objection is the difficulty of procuring sheets of glass of equal thickness. This does not apply to my sections, as no matter how many different thicknesses of glass there may be, all are cut with the same tools, and yet the outside measurement of the sections will be exactly alike, all variations being thrown inside, where, of course, it does not matter.

The second is the cost, in comparison with the American one-piece. He says suitable glass costs not less than 3d. per square foot, and at this rate a thousand sections will cost in glass alone £4 3s. 4d. The writer does not clearly show how he works out this little sum, so I cannot test his arithmetic, which may be as sound as the idea of going to buy glass by odd square feet to make 1000 sections. Here is my answer to this, which all can test for themselves. My sections are 5¼ inches high by 3¼ inches wide, by one-nine-sixteenth inch thick. This size holds 16 ozs. of honey without the glass. A piece of glass 33½ inches by 42½ inches—under 10 square feet—will make fifty-four sections. A "case" of 15-oz. glass contains 300 square feet. This will cut up into 1620 sections at least; it will make a few more with a little care.

These cases can be bought for 24s. to 26s. per case; or box glass for 9s. to 10s. 6d. per box of 100 feet. These latter are cut for ordinary window panes, so that sizes can be selected that will cut up without any waste; thus it will be seen that if we have to use new glass it will not cost more than 15s. per 1000, and a pair of hands could easily cut up 50,000 per day, so I do not see that the price would exceed that of the American wooden ones. But I do not propose to use new glass at all, as in every glass warehouse throughout the country there is a vast quantity of waste glass made, consisting of long narrow strips, which are thrown under the bench with a twist to smash them as small as possible. For this glass, called "cullet," they get from 15s. to 20s. per ton. Every piece three-one-eighths by one-nine-sixteenths, of which will make a section side, and I find they will readily put all these strips in boxes for me for 2s. 6d. per cwt. Though 1 cwt. will not make quite 1000 one-pound sections, 2 cwt. will make 1000 each one and two pound. As I think more of this cullet will always be produced than will ever be required for sections, I think I am well within the mark in saying that my sections do not cost in glass more than the odd 3s. 4d. named in the estimate already mentioned.

The third objection is expressed by asking, "What bee-keeper can afford to add a card or other fancy case to comb honey worked in such an expensive (?) receptacle?" My answer is, that glass sections require no "card or other fancy case;" they are insect and dust proof, nor could anything be added without spoiling their beauty. Therefore, by using glass sections the expense of a "fancy case" is saved.

In the fourth he objects to "four unattached pieces of glass" as not being safe to handle. Well, the fact that the first one safely reached the Editor's hands through the mail; that another I have carried in my coat pocket for about 500 miles, and shown it to about 100 different people, should be proof sufficient that such fears are groundless.

In his fifth he says the wax comb will leave the glass and the honey run out, making the section unsaleable. This, as a matter of fact, never can happen, and if the glass is too cold or damp the bees cannot "weld" their wax to it, and in trying to do so work their combs against the glass with a thick "frosted" appearance. When this is so they never put honey in the cells next the glass, as instinct teaches them it would run out. When the glass is kept warm and dry they work their cell walls on it almost as thin as paper; these being perfectly welded to the glass are invariably filled with honey. In connection with this there is a most important point to consider. It is well known that the combs in wooden sections crack in cold weather, setting the honey bleeding; this is caused through the honeycomb contracting within the wooden section, which will not expand or contract with heat and cold. Glass has this property; in fact it contracts and expands almost in the same ratio that honeycomb does. Hence with glass there is no fear of cracked or bleeding

sections. I have some glass sections now that have been worked two years; they have been frozen down to 20° and heated up to 90°, which show no crack and the honey is still clear.

In his sixth he says, "We have yet to mention one other serious drawback, common to all glass sections, and that is, the bees are not so willing to enter the super as where only wood is present." Whether this has been a drawback or not with previous attempts to make glass sections I will leave for others to discuss; what concerns me is the assertion that it applies to "all glass sections," including, by implication, all future ones as well. Now all bee-keepers who have worked the American sections know that bees do not readily take to them, and all kinds of dodging are resorted to to get them up. In my glass sections there is not this difficulty. If the bees are ready for supering they go up with a rush in a few minutes after putting on; they will also go up when they are not strong enough to remain in at night; in fact they take to them as readily as empty combs in ordinary frames.

Having answered all the objections, I beg to inform "A Sussex Amateur" that what I promised in the second paragraph of my letter on page 413 I intend to fulfil. I do not intend to sell the sections ready cut myself, I may supply the cutting tool at 1s. My object is to show every bee-keeper how he can make his own sections in winter, which is a time of the year he is little occupied with the bees. Cutting these sections will find him work and help keep up his interest in honey and bees. Some of these people will get very expert in cutting them. They may also be able to obtain a large supply of cullet at a cheap rate, therefore it is not out of the way to suppose numbers will be glad to sell them at 10s. per thousand. If "A Sussex Amateur" does not care to make his own—and what amateur would buy what he can possibly make?—he must look to these people for his supply.—A Hallamshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

Putz & Roes, Erfurt, Prussia.—*Annual Seed List, 1888-1889.*

S. F. Armitage, Nottingham.—*Catalogue of Fruit Trees, &c.*

Dickson & Co., 1, Waterloo Place, Edinburgh.—*Catalogues of Fruit Trees and Roses.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Exhibiting (*Fair Play*).—There are four classes on the cutting sent, and you do not state to which you refer. If to the plant classes, we do not think a gentleman employing a groom and gardener regularly would be eligible to compete.

Chrysanthemums for Exhibition (*W. W.*).—If you cannot select the leading varieties from the prize stands published in the reports of shows they will be tabulated in due time, and you can then choose the number required.

Chrysanthemum Sport (*T. S.*).—The flowers you send are those of Pink Christine, a well known reflexed variety. Mrs. Forsyth is White Christine, several other forms being also grown, as the Christine type has been found to be very variable and sportive.

Books (*J. H. W.*).—We should think that "The Elements of Entomology," by W. S. Dallas, published by C. Griffin & Co., Exeter Street, Strand, London, and Kirby's "Text Book of Entomology," published by Murray, Albermarle Street, London, would suit you. With respect to the other question, write to Mr. J. Browning, 63, Strand, London, for a price list.

Peach Trees Infested with Scale (*W. W. Kent*).—Syringe the trees with a solution of softsoap (6 ozs.) and soda (1 oz.) in 4 gallons water, adding a wineglassful of petroleum, keeping them well mixed either by alternate discharges from the syringe into the watering pot, or a second person stirring briskly with a broomhandle whilst the trees are being syringed. Repeat, if necessary, in the course of a week, and again before the buds begin swelling.

Marsh Mallow or Marigold (*A. B. C.*).—The Marsh Mallow is Althæa officinalis, not an especially attractive plant, but we should think you mean the Marsh Marigold, Caltha palustris, which has showy golden flowers, and it would succeed admirably in such a position as that you describe. They require moist rich soil, and if favourably suited in this respect they will grow vigorously and flower freely in early spring. There are both single and double varieties, which you can obtain from any dealer in hardy plants.

Plants for Rockery (*W. R. T.*).—Do not confine your plants to those of a "creeping character," but mingle with them others of a dwarf, compact, or spreading growth, and the effect will be much more satisfactory. Among those which we find to answer are Erica carnea, Azalea amœna, Kalmia nana, Erica Foxii, Phlox frondosa, P. Nelsoni, P. verna, P. setacea, Plumbago Larpentæ, Thymus lanuginosus, Silene maritima, Hyperieum patulum, Lithospermum prostratum, Rhododendron ferrugineum, Andromeda floribunda, A. Catesbœi, and Gaultheria procumbens.

Asphalt Walks (*Young Hand*).—Perhaps it is best made of two parts lime rubbish and one part coal ashes, both very dry and sifted fine. Mix and leave a hole in the centre of the heap, and into this pour boiling coal tar, mixing well together. When of the consistency of mortar spread it 3 inches thick, on a dry and previously well prepared or levelled surface. Sprinkle with sharp dry sand. When sufficiently stiffened pass a roller over the asphalt. A good foundation should be formed of rough material, and drains to carry off the surface water. The work should be done in dry hot weather. The ashes from engine furnaces will be the most suitable.

Heating a Peach House (*Idem*).—A flow and return 4-inch pipe will give sufficient heat in the Peach house, and you will need valves on both the flow and return so as to regulate the heat to a nicety, as the pipes being 3 feet higher than in the other houses, the hot-water circulation will be much freer. Either you must have the expansion pipe correspondingly higher or put in syphons, doing away with the open expansion pipe, and have a feed cistern in stokehole, allowing for expansion in fixing the Peach house pipes or have an expansion cistern. We should take the pipes across the yard as you propose, employing 2-inch pipes both for the flow and return. You will need air taps at the highest point of the pipes in all the structures.

Asparagus (*A. A. B.*).—If you dig up and divide the roots, replanting a portion on the same ground and the surplus on land adjoining, you will gain time in the production of heads on the second plot, but lose in the case of the former through the check resulting from removal, this being small or the reverse according to the weather. Taking all things into consideration, we should not disturb the yearlings, but let them grow. Two or three plants together, a foot or 18 inches apart, in rows 2 feet asunder, will have no appreciable effect on the produce. Possibly you will be able to cut a greater number of good saleable heads from them sooner than you would from single plants, though these in time would perhaps afford some stronger growths. We usually sow two good seeds at the desired intervals, and are not greatly disappointed if both produce plants. If your soil is suitable for Asparagus the crop ought to pay very well, as you have facilities of disposing of the produce. If you want thick white stalks and green or purple tips only, they are obtained by piling earth over the crowns when the plants are strong enough for cutting.

Plants for Rockery (*G. T.*).—It is difficult to name plants that rabbits will not eat, as much depends upon their number, the severity of the weather, and the scarcity of their natural food—*i.e.*, grasses and other herbage. The following are not usually eaten by rabbits, and will grow in rather shady situations, but not under the drip of trees:—Arabis albida, Aubrietia græca, Azalea amœna, A. procumbens (the two last are dwarf shrubs requiring heat), Campanula garganica, Cistus vars. but they are not very hardy; Cotoneaster rupestris (dwarf shrub) Cyclamens Atkinsi, Coum, vernum, hederæfolium, and neapolitanum do well in shade at the foot of rockwork; Cytisis decumbens, Daphne Fioniana, Erica carnea, Genista præcox, Geum montanum, Iberis corræfolia, Lithospermum prostratum, Phlox Nelsoni, P. verna; Primulas in variety do well at the foot of rockwork in partial shade; Rhododendron hirsutum, Rosa rugosa, and var. alba, Saxifraga Camposi, Sedum spectabile, and Sempervivum arachnoideum. The Vincas and Hyperieum calycinum form a dense covering in shade, and rabbits care nothing about them. Hellebores, Trollius, Trillium, &c., do well in partial shade, and are fine at the foot of rockwork, where they have plenty of good soil and moisture.

Planting Peach Trees (*S. T.*).—We have never seen better Peaches than from trees grown in a border 15 inches deep resting on a gravel subsoil; but the border was composed mainly of good turfy loam of medium texture, and was mulched liberally with manure. You say you have some doubt as to whether your soil is suitable for Peach trees, yet omit to say one word as to its nature. All we can do, therefore, is to advise you to mix lime rubbish and gritty matter with it if it is heavy, and strong loam or clay dried and crushed if it is light. The trees may be planted at once, and a good covering of manure placed over the roots. You do not state the number you require. The following are good varieties for succession, and will ripen in a house without fire heat:—Alexander, Hales' Early, Rivers' Early York, Gros Mignonne, Royal George, Bellegarde, and Barrington. These will probably be as many as you require. If you desire to plant a Nectarine or two, Lord Napier (early) and Pine Apple (late) will probably give satisfaction. If you can make the border 6 inches deeper by adding fresh loam, or such soil as would grow

first-class Potatoes, you will not err by doing so. You must be careful, too, not to keep the house too close in winter, or the blossom will expand too soon, and be cut off by spring frosts, notwithstanding the protection of the glass. We have seen many failures in unheated Peach houses, and we always think a well-built house incomplete where no provision is made for heating.

Defective Chrysanthemum Blooms (*Nil Desperandum*).—The so called sport from Duchess of Albany is only a deeply coloured bloom of that variety, which is deeply shaded with red and much superior to the many washy coloured blooms seen of this variety. The depth of colour contained in your bloom may have been occasioned by the nature of the soil or other conditions, such as bud formation, which alters considerably the colour of the blooms, which in some instances renders them almost unrecognisable. The late formed buds generally produce the deepest coloured flowers. The pink incurved bloom is Alfred Salter, which is lilac pink when in proper character. Empress Eugénie is rosy lilac, much smaller than Alfred Salter, the florets curl more, the foliage being quite distinct, much broader, and more fringed around the edge. The colour of the leaves is generally paler than those of Alfred Salter, which is an exact counterpart of Queen of England, from which it is a sport. The malformed blooms you send and the others which you name are caused by defective growth, which is a very common occurrence this season. The chief cause is the unfavourable weather experienced, another the immature state of the wood. Possibly the evil was increased by applying stimulants to the roots too freely, causing the growth to be too gross, which usually results in deformed flowers. Although many good blooms of Bronze Queen have been seen this season, large numbers have been defective in form, showing much more of a reflexed character than an incurved one. The wet, cold, sunless weather experienced has been all against well-formed solid blooms in the incurved section.

Tomatoes and Roses (*S. S.*).—No doubt very good crops of Tomatoes could be obtained from your house, at least the thinly-trained Roses on the roof would be no great impediment. It is not a question of the Roses interfering with the Tomatoes, but the Tomatoes with the Roses, assuming the roots of the latter are inside the house. If outside—and they are as well there—there will be no conflict. If you refer to page 361, the issue of October 18th, you will find an example of Tomato growing to follow. The plants there figured, and which are still bearing, have produced nearly £100 worth of fruit. They were planted 2 feet 4 inches apart during the first week in May, in a foot of good but not rich loam. The plants were 18 inches high or thereabouts when planted, with stems as thick as your thumb and flower buds visible. Such plants may be raised from seed sown very thinly early in March, the seedlings being placed separately in small pots, grown steadily and sturdily in a very light position near the glass, eventually shifting them into 5-inch pots, and growing them under the full influence of light, with as much air as they will endure for ensuring firm growth. When flowers are produced freely, a dry atmosphere should be maintained till many fruits are set, and not till good crops are swelling freely should very much water be given or stimulants used. Forcing the growth early, rendering it essentially soft in character, invites the disease that injures or ruins the plants. Perfection is the most profitable variety at Chiswick, as its large fruits have been in demand, but in many if not most markets fruits of medium size are preferred. Sutton's Earliest of All is useful for first gatherings, and you might try a dozen or more plants of it. Perfection, Gilbert's Surpasse, Hackwood Park, Excelsior, and its robust ally Ham Green Favourite, we have seen producing profitable crops this year. Horsford's Prelude is a splendid cropper, but the fruits are rather small, and might be too small in the hands of some growers. Those at Chiswick were perhaps as large at could be grown, and were sold for 1d. a pound less than the larger sorts, but the greater abundance of Prelude would render the value of the crop of the same number of plants of each not far below any of them. An enlarged form of the variety last named combining its productiveness would be a great acquisition. No artificial heat was employed in the Chiswick Tomato house after planting until the autumn for ripening late fruits. The plants were not topped nor laterals permitted to grow from the main stems. Blenheim Orange and Golden Queen are good yellow fruited sorts, if a few yellow fruits are wanted.

Returning Packages (*J. L. R.*).—Specimens sent to be named, whether of plants or fruit, are not returned, and it is understood that duplicates are kept by the owners of such that it is desired to preserve. It is impossible we can undertake to return specimens of the nature indicated.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*T. H. Slade*).—1, Cassante de Mars; 2, Doyenné Boussoch; 3, Colmar d'Aremberg.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the nnmbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*M. G. M.*).—Flowers packed in tissue paper and dry wooden boxes invariably arrive in a much shrivelled condition, and that was the state in which yours reached us. As nearly as we can judge, however, your plants are as follows, reserving two (Nos. 4 and 5) for further examination and comparison:—1, Cœlogyne fuliginosa; 2, Maxillaria picta; 3, Oncidium Papilio; 6, Phalænopsis amabilis. (*Northerner*).—1, Cuphea eminens; 2, Lonicera sempervirens. (*W. R. S.*).—1, Selaginella Martensi; 2, S. Kraussiana; 3, S. serpens. (*N. M. O.*).—1, Luculia gratissima; 2, A variety of the above named glabra having smooth flower and leafstalks and stems.

COVENT GARDEN MARKET.—DECEMBER 5TH.

MARKET well supplied, prices remaining unaltered with the exception of Grapes, which are firmer, and Nova Scotia Apples, which are 2s. per barrel lower.

FRUIT.

	s. d.		s. d.		s. d.		s. d.
Apples, ½ sieve	2 6	to	4 6	Lemons, case	10 0	to	15 0
,, Nova Scotia and Canada, per barrel	10 0		19 0	Oranges, per 100	4 0		9 0
Cherries, ½ sieve	0 0		0 0	Peaches, dozen	0 0		0 0
Cobs, 100 lbs.	100 0		0 0	Pears, dozen	1 0		2 6
Grapes, per lb.	0 9		3 0	Plums, ½-sieve	0 0		0 0
				St. Michael Pines, each	3 0		8 0

VEGETABLES.

	s. d.		s. d.		s. d.		s. d.
Artichokes, dozen	2 0	to	3 0	Lettuce, dozen	0 9	to	1 3
Asparagus, bundle	0 0		0 0	Mushrooms, punnet	0 6		1 0
Beans, Kidney, per lb.	0 10		0 0	Mustard and Cress, punt.	0 2		0 0
Beet, Red, dozen	1 0		2 0	New Potatoes, per cwt.	0 0		0 0
Broccoli, bundle	0 0		0 0	Onions, bunch	0 3		0 0
Brussels Sprouts, ½ sieve	1 6		3 0	Parsley, dozen bunches	2 0		3 0
Cabbage, dozen	1 6		0 0	Parsnips, dozen	1 0		0 0
Capsicums, per 100	0 0		0 0	Potatoes, per cwt.	4 0		5 0
Carrots, bunch	0 4		0 0	,, Kidney, per cwt.	4 0		8 0
Cauliflowers, dozen	1 0		2 0	Rhubarb, bundle	0 2		0 0
Celery, bundle	1 6		2 0	Salsify, bundle	1 0		1 6
Coleworts, doz. bunches	2 0		4 0	Scorzonera, bundle	1 6		0 0
Cucumbers, each	0 3		0 4	Shallots, per lb.	0 3		0 0
Endive, dozen	1 0		2 0	Spinach, bushel	1 6		2 0
Herbs, bunch	0 2		0 0	Tomatoes, per lb.	0 3		0 8
Leeks, bunch	0 3		0 4	Turnips, bunch	0 4		0 0

CUT FLOWERS.

	s. d.		s. d.		s. d.		s. d.
Abutilons, 12 bunches	3 0	to	6 0	Margnerites, 12 bunches	2 0	to	6 0
Arum Lilies, 12 blooms	3 0		6 0	Mignonette, 12 bunches	2 0		4 0
Asters, dozen bunches	0 0		0 0	Narcissus (Paper White), 12 sprays	1 0		1 6
Azalea, 12 sprays	0 9		1 0	,, (French) bunch	0 3		0 6
Bouvardias, bunch	0 6		1 0	Pelargoniums, 12 trusses	1 0		1 6
Calceolaria, 12 bunches	0 0		0 0	,, scarlet, 12 trusses	0 4		0 6
Camellias, 12 blooms	3 0		4 0	Poinsettia, dozen blooms	4 0		6 0
Carnations, 12 blooms	1 0		2 0	Pyretbrum, doz. bunches	0 0		0 0
Chrysanthemums, 12 bl.	1 0		3 0	Roses, Red, 12 blooms	1 0		2 0
,, 12 bchs.	3 0		9 0	,, (indoor), dozen	1 0		1 6
Cyclamen, dozen blooms	0 4		0 9	,, Tea, dozen	1 0		3 0
Dahlias, 12 bunches	0 0		0 0	,, yellow	2 0		4 0
Encharis, dozen	3 0		6 0	Stepbanotis, 12 sprays	4 0		6 0
Gardenias, 12 blooms	3 0		6 0	Tropæolnm, 12 bnnches	1 0		2 0
Hyacinths (Roman), doz. sprays	1 0		1 6	Tuberoses, 12 blooms	0 9		1 0
Lapageria, 12 blooms	1 0		2 6	Gladiolus, 12 sprays	0 0		0 0
Lilac, White (French), per bunch	6 0		7 0	Violets, 12 bunches	1 0		1 6
Lilinm longiflorum, 12 blooms	4 0		6 0	,, Parme (French), per bunch	3 6		5 0
				,, (French) bnnch	1 6		2 0

PLANTS IN POTS.

	s. d.		s. d.		s. d.		s. d.
Aralia Sieboldi, dozen	6 0	to	12 0	Evergreens, in var., dozen	6 0	to	24 0
Arum Lilies, per dozen	9 0		12 0	Ferns, in variety, dozen	4 0		18 0
Arbor vitæ (golden) dozen	12 0		24 0	Ficus elastica, each	1 6		7 0
Asters, 12 pots	0 0		0 0	Foliage plants, var., each	2 0		10 0
Begonias, various, per doz.	4 0		9 0	Fuchsia, dozen pots	3 0		6 0
Chrysanthemnm, doz.	4 0		9 0	Hyacinths (Roman), doz.	9 0		12 0
,, large, doz.	15 0		24 0	Lilium, various, doz. pots	12 0		21 0
Colens, dozen	2 0		4 0	Margnerite Daisy, dozen	6 0		12 0
Cyclamen, dozen pots	9 0		18 0	Mignonette, per dozen	0 0		0 0
Dracæna terminalis, doz.	30 0		60 0	Myrtles, dozen	6 0		12 0
Dracenæ viridis, doz.	12 0		24 0	Palms, in var., each	2 6		21 0
Erica hyemalis, doz.	12 0		24 0	Pelargoniums, scarlet, 12	3 0		6 0
,, gracilis, doz.	9 0		12 0	Poinsettia, per dozen	10 0		15 0
,, various, doz.	8 0		18 0	Primula, per doz.	4 0		6 0
Enonymus, var., dozen	6 0		18 0	Solanums, doz.	9 0		15 0



SHEEP MANAGEMENT.

HIGHLY desirable as the development of early maturity undoubtedly is, it has its limit of utility in practice, and we shall do well now to turn our attention to the requirements of the land from sheep. In the great corn-growing district of East Anglia corn and sheep farming have become blended so intimately that the one has come to be regarded as inseparable from the other. Under the agricultural depression many a farmer has been driven by stress of circumstances to sell his flock. Serious as have been all the attendant evils of hard times, there is not one of them

which we deplore more than this lamentable sale of all the sheep from a farm, for it is a sure sign and token of despair, failure, bankruptcy. To our postulate, "If the elements of fertility withdrawn from the land by a crop are restored to it regularly before taking another crop, exhaustion is impossible," all farmers will agree, whether they be advocates of muck or any other form of manure, and there is a concensus of opinion that there is no more certain or economical method of applying manure to land than by sheep. It is, however, by no means so certain that the full value of sheep folding is so fully recognised, yet the matter is so simple, that a grain or two of common sense, combined with an ordinary amount of intelligence, ought to convince anyone of its importance.

Folding really means concentration and thoroughness, and we do it, not so much for the clearance of a crop, as for the thorough manuring of the land. Confined within a fold for a given period of time, the sheep must do much more good to the land than if left to ramble at will over fifty or a hundred acres. By folding, we feed the sheep, and at the same time store the soil with fertility. The sheep should eventually make us a fair return for the crops they consume, and their manure not only saves an outlay for chemical manures, but it renders the next crop a full and profitable one. Clear, simple, and unmistakeable as these facts are, they form a primary rule for our guidance in sheep management. We must have sheepfolds going as long as we can throughout the year. As we sit writing this article we have two flocks of hoggets on the road; one flock being driven some fifteen miles to be folded on Turnips, with crushed corn and chaff, the other some twenty miles for the same purpose. The last flock of three hundred hoggets has been kept on a heavy land farm till the Turnip folding was done, our object being to get through with this before the clay land became too much saturated with moisture for folding. This is done, the land will be ploughed and left for spring corn, and the hoggets now go to a mixed soil farm, where they will be in Turnip folds, with a change to pasture whenever the weather renders it necessary.

Now these hoggets were not highly fed from the first, in point of fact they had no corn till autumn folding began. Hoggets forced to early maturity are being drafted to the butcher now, the other hoggets will then follow them towards the end of winter, onwards throughout spring and early summer. We have to remember all this when the lambs first begin eating, and to arrange the dietary according to their use upon the land. In any case sheep intended for the butcher—that is to say, wethers, ought never to be kept longer than sixteen or seventeen months, or beyond June or July in the second year. In writing thus we keep profit and loss specially in view and ignore fancy altogether. We mention this because we know that on many home farms sheep are kept for home consumption to the age of three and four years, but such practice is altogether apart from that of an ordinary farmer, and sheep kept to that age are to be regarded as an article of luxury. But even in this matter of keeping sheep till age imparts colour and flavour to mutton we avoid doing so at a loss by making a selection of the best of the crones or over-age ewes that are drafted from the ewe flock every year. These old ewes if put upon sound pasture with a pound of crushed Oats daily soon come into fine condition for killing, and we have supplied the table of a connoisseur with such mutton to his entire satisfaction, especial commendation being bestowed upon the mutton for its colour, flavour, and delicacy. The latter quality, it must not be forgotten, depends very much indeed upon the management of the meat after it reaches the hands of the cook. A certain hotel at which we frequently dine on market days is famous for its saddles of mutton, and this high reputation is maintained simply by careful selection of the meat combined with judgment in keeping it and skilful cooking.

WORK ON THE HOME FARM.

Glad indeed are we to find all sorts of winter corn coming well above the surface—a good, full, strong plant, which the exceptionally mild weather has induced to grow freely, and some little feeling of anxiety about late sowing and seed germination is now at an end. Soft seed is not necessarily immature. Of course it is practically unsaleable to corn dealer or miller, but if fully developed we desire nothing better for sowing. In point of fact germination of such seed is much more brisk than it is when the seed has been rendered very hard in a hot dry summer. Some of the Wheat was not sown in a satisfactory manner. We came upon one of our bailiffs this season sowing Wheat upon a Clover layer, which had only been ploughed a few days before the sowing. The land was wet and heavy, and in order to get sufficient depth of soil for the drills heavy harrows had been used, and they had pulled many of the sods green with Clover up in very rough fashion. When we came on the scene there was only about half an acre more to sow, and the bailiff was very confident he should be able to put the surface in order next spring. We agreed that he should finish, for the only loss if it failed would be a bushel or two of seed Wheat, and the experience gained might be worth very much more. We have heard of a light land farmer whose land is badly infested with Poppies harrowing the Wheat as soon as it was well up in order to destroy the pest. We seriously question the wisdom of this proceeding, for the young Wheat plant had so little hold of the soil as to be liable to serious damage now. If the harrowing had been left till spring, the Poppies might then be destroyed, and the Wheat would by that time have its roots so deep down in the soil that it could sustain no harm. Avoid ill-considered, rough-and-ready practice, say we. We have known much harm done to Barley in spring by a similar process of harrowing soon after the plant was visible to destroy Charlock. Due care must be taken to open water furrows across headlands into ditches, to ensure the speedy passage of all surface water from the land. Never suffer water to accumulate for want of such attention, as the crop is certain to suffer.

THE PLOUGH DRILL.

WOULD the writer of "Home Farm" in the Journal of November 8th, No. 2093, be good enough to describe in a future number the "single drill" which was used attached to a plough for sowing Winter Beans and Tares? An effective implement of this kind would be most useful to many small farmers, who are sometimes much inconvenienced by not being able to obtain the use of a large drill at the time most suitable for sowing his seeds.—GEO. PARISH.

[The correct name of the single drill is the plough drill. It consists of a tapering wooden spout open at top and bottom, with an arm at the top, which is fastened to the plough beam by a bolt passing through it and the beam, with a nut and screw at the end. At the bottom of the drill is a wheel with the axle passing through the drill, and having a wooden collar on that part of the axle inside the drill, with diagonal grooves around the collar. This wheel runs upon the land, the motion of the plough causing it to revolve, and the seed to pass out with a steady regular flow. The distribution of the seed is regulated by an internal brush, which is raised or lowered by means of a sliding arm and screw. There is a staple on the drill, and at the end of each furrow the drill is lifted and suspended by the staple to a hook on the plough beam sufficiently high to prevent the wheel from rotation, and so stop the flow of seed while the plough is turned. The price of the drill is 18s. It is a cheap, simple, and efficient labour-saving appliance, indispensable to all small farmers, and useful to every farmer. We have several of these drills at each of our large farms, and have found them of especial use this autumn.]

THE BIRMINGHAM CATTLE AND ROOT SHOW.—We are requested to say that the stand of Messrs. Webb & Sons, Wordsley, contained the finest displays of roots and seeds they have ever arranged at Bingley Hall, and was a prominent feature of the Exhibition.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1883. November and December.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 25	29.969	54.2	51.2	S.W.	48.0	55.3	51.6	60.9	48.1	0.532
Monday..... 26	29.523	46.6	45.8	S.W.	48.4	52.1	48.1	71.9	43.2	0.094
Tuesday 27	29.360	51.9	50.7	S.E.	47.9	53.5	43.1	69.1	36.1	0.136
Wednesday.. 28	29.482	36.4	36.3	S.E.	45.9	45.5	34.6	47.1	28.2	0.299
Thursday 29	29.364	47.3	44.6	S.E.	44.8	47.3	36.0	52.0	31.7	0.139
Friday 30	29.252	44.9	44.8	N.E.	44.9	45.6	44.7	46.8	38.8	0.552
Saturday 1	29.755	37.9	37.6	N.E.	44.5	48.1	36.7	49.2	30.7	—
	29.542	45.3	44.4		46.2	49.7	41.8	55.4	36.7	1.744

REMARKS.

25th.—A little rain early, but not measurable; fair day, with a little sunshine in afternoon.
26th.—Overcast early; fine and bright after 10 A.M.
27th.—Wet morning; gale in afternoon, with frequent sunshine; fine night.
28th.—White frost early; fog all morning; wet afternoon and evening.
29th.—Overcast all day.
30th.—Heavy rain all day; fine night.
1st.—Bright fine day; clear night.

A warm and wet week, the night between November 24th and 25th exceptionally warm.—G. J. SYMONS.

HISTORICAL NOTES ON ORCHARDS.

THIRTY-FIVE years ago notes on orchards of the past were written by an able and very old acquaintance of ours ; the fruit question, for there was a "fruit question" then, as now, was also discussed, and the condition of British orchards at that time described and lamented. In looking over those notes we have been interested, and as they refer to matters possibly not known to young men of the present day, and some of which matters their elders may have forgotten—namely, the duties imposed on foreign fruit and their effects on home prices ; the reduction of those duties, and the consequent uprooting of orchards ; the agitation for the re-imposition of the tax, and a parliamentary inquiry, with the examination of witnesses ; the, to some, curious result that, after the duty was decreased to a nominal sum, the prices for Apples increased in our markets to figures then claimed as remunerative to growers—as all those items are interesting, and some observations thereon suggestive, we make no apology for placing them before our readers.

An important and practical deduction from what appears will be seen to be this—if an extension of orcharding was desirable then as a profitable occupation, and for meeting the wants of consumers with superior home-grown produce instead of by large importations of imported fruit, how much more desirable is it to extend fruit plantations now that prices for Apples are higher than they were in 1850, and for several years previously, as will be seen by the tabulated lists that will be given? We are constrained to say that at no time in the history of orcharding were the prospects brighter for planters, and good returns surer than at the present time. An ever-growing population will, and must, demand increased supplies of fruit, and if these are not provided at home they will be had from abroad, preference being given to the "best for the money," for it is not the habit of purchasers nowadays to ask where fruit is grown, for they do not care, but buy that which best suits them, come from whence it may. Whether this is the most agreeable or not to home growers, it is a home fact, and as such must be met. The whole question, then, of fruit production for the multitude resolves itself into a question of judgment in selection, skill in cultivation, and enterprise in supplying the markets with consignments that both in appearance and quality best meet the public taste. Let landowners recognise this, and they will perceive it is to their advantage to offer facilities for the cultivation of fruit, and growers of it will then know that it depends on themselves whether the money of consumers is to be "kept in the country" or go out of it for their daily supplies of what will be more and more recognised as healthy wholesome food. With these observations we introduce the notes referred to, which the writer of them little thought, when he penned them so long ago, that he would read them in the *Journal of Horticulture* in 1888. They are as follow :—

The interest which the study and cultivation of fruits have of late excited, and the importance with which they are likely to be regarded, induce us to give the subject that consideration which it appears to demand. There can be no doubt that is a subject which has of late years been too much lost sight of ; and particularly since the duty of 4s. per bushel on foreign fruit has been removed, the growers seem to have thought that it is one which does not concern them. We shall now lay down a sketch of this branch of rural economy, and see how far they are acting with a due consideration of their own interests in neglecting it. Our observations will be directed to the great orchard districts of Kent, which will furnish good evidence, however, equally applicable to other parts of the country.

It is upwards of 300 years since Richard Harris, "the king's fruiterer," planted his orchard, called "The Brennet," at Tenham, in Kent. This was not, as some say, the first orchard ever planted in Kent ; neither was it, as some still more erroneously have stated, the first that existed in England. Fruit was grown for commercial purposes from time to time immemorial before then ; but the reason why Richard Harris left his counter and his counting-house to become a Kentish fruit-grower was the very same that would induce many an equally respectable fruiterer of the present day to act similarly. It was this :—"Having observed that those plants which had been brought over by our Norman ancestors had lost their native excellence by length of time, and that we were served from foreign parts with those fruits : on that account, which he saw no reason for, as neither the soil nor the climate here were unequal to the bringing of them to perfection, determined to try a plantation here ; for which purpose, having in 1533 obtained 105 acres of rich land, then called 'The Brennet,' he divided it into ten parcels, and then having with great care, good choice, and no small labour and cost, brought plants from beyond the seas, he furnished this ground with them in rows in most beautiful order."

The necessity for such a complete change of the system which had hitherto prevailed, and the success which attended this experiment were so great, that Tenham became the centre from which all the other plantations emanated. So extensive and rapid was the influence which this example had that Lambarde, writing in 1570, says, this parish, with thirty others lying on each side of the great road from Rainham to Bleamwood, was, in his time, the Cherry garden and Apple orchard of Kent ; and, further, that "the orchards of Apples and gardens of Cherries, and those of the most delicious and exquisite kinds that can be, no part of the realm (that I know) hath them, either in such quantity and number, or with such art and industry set and planted."

We shall not stay to inquire into the decline and fall of these orchards, nor shall we trace the causes which led to these results ; but, in all probability, the trees were allowed to become aged, diseased, and unfruitful, a succession was not provided, and they became extinct. We are induced to believe that such was the case, for a writer of that time states that these orchards continued to exist till within memory, when the lucre of planting Hops prevailing, few of them were suffered to remain. From the fact, too, of the writers of the seventeenth century, among whom were Ralph Austen, Hartlib, Bligh, Evelyn, and Worlidge, urging so strongly the encouragement of orchard planting as being a matter which should engage the attention of the Government as well as private individuals, there is every reason to believe that the cultivation of fruits had, to a great extent, been discontinued and neglected. By the writings of these men a fresh impulse was given : new plantations were formed and new varieties of fruit introduced, the old varieties having been allowed to disappear with the old orchards. The new sorts were as superior to the former as the former were to those of which Richard Harris complained. But these new plantations were doomed, in their turn, to the same fate as all the others which preceded them ; and so, in the year 1778, we find it said that Rainham had "within memory great plantations of Cherries and Apples, especially on the lands adjoining the high road, and to the northward of it ; but the greatest part of them have been displanted some years since." And of Newington it is said, that it "was formerly the greatest part of it planted with orchards of Apples, Cherries, and other kinds of fruit ; these falling to decay, and the price of Hops making them a more advantageous commodity than fruit, most of the orchards in the parish were displanted, and Hops raised in their stead."

We shall give one more instance ; it is of Borden, where "the

and is fertile, and much covered with orchards, and some years ago, more so than at this time, many of them being decayed and worn out, were displanted." Now these orchards of which we have last spoken were, no doubt, those which were called into existence by the writers of the seventeenth century; but no regular systematic planting and successive cultivation of fruit trees seems ever to have been kept up in this country; whatever was done was brought about by urgency, and carried out with impetuosity, but no steady, continuous system of operation; and hence the state in which our orchards were at the close of the last century.

It will be perceived from the above observations that in one important respect the circumstances are the same now as then—orchard trees allowed to go to decay, and succession not provided, the practical result being an invitation to enterprising cultivators abroad to supply our markets with Apples. They have done so. But a reason for neglecting orchards appears to have existed upwards of a generation ago that is not advanced now—namely, the great profits attending Hop culture. Hops appear to have ousted Apples at one time; but times change, and it is not unlikely that Apples will to a large extent oust Hops in some localities, and be grown more extensively in others where Hop culture has not been pursued. The subject will be resumed.

CAMELLIA BUDS FALLING.

Every season many growers are disappointed through the buds of their Camellias falling prematurely, but the cause is often due to faulty culture and mismanagement. At this period of the year severe weather may be expected any day, and fire heat is often employed liberally to insure safety. The temperature is kept even higher during severe weather than previously, when the nights have been mild, and no fire heat was employed. The sudden change to a warm dry atmosphere is alone sufficient to result in the plants casting their buds. If frost could merely be excluded, having a temperature of, say, 35°, it would be better for the Camellia, but perhaps not so well for other plants in the same structure; therefore it is often necessary to maintain a temperature at night ranging from 40° to 45°. The plants must then occupy the coolest end of the house, and not be stood on an open stage formed with wood scantlings so frequently employed in greenhouses. Through such stages the warm dry air as it rises extracts the moisture from the soil as well as from the leaves of the plants, with the result that the buds fall directly or a short time afterwards. If the stage is covered with zinc, and one or two inches of moisture-holding material placed over it, such as ashes, gravel, cocoa-nut fibre refuse, or any similar material, it will be much better for the plants. When strong fire heat is employed, syringe the stems and foliage of the plants just before dark, and again in the morning if they are dry. If this is done, other conditions that will be pointed out being properly observed, the buds will not fall.

Failure not unfrequently occurs through attempting to force these plants into bloom by a given date. If the change from the one treatment to the other is sudden, the buds or flowers when half expanded are almost certain to fall prematurely. They will bear forcing, but the change must be gradual. Plenty of moisture must be applied both to the plants and the atmosphere, and in no stage must strong dry heat be maintained about them. More buds probably fall through trying to force the plants into bloom than from any other cause. The best and safest method of growing Camellias to yield their flowers early is to assist them early in the season to make their growth. One season's early growth, if the plants are kept under glass the whole of the year, will result in flowers by Christmas with cool autumn treatment. By growing them early for several seasons they can be had in bloom two or three months sooner. For the majority of people Christmas is early enough now that Chrysanthemums can be had in abundance through the whole autumn. Directly growth has been made the plants must be gradually hardened to cool, airy, and drier treatment until the buds form at the extremity of the shoots. At this juncture amateurs often place their plants outside for the remainder of the summer. This can be carried out successfully by those who are thoroughly familiar with every detail of the plant's requirements; but my advice is, Keep the plants under glass, and the buds will gradually develope, and two or three risks are avoided. When placed outside the time comes for housing the plants, and fatal results often follow. They are removed from a genial position and moist surroundings outside to ungenial air inside; perhaps stood on an open stage in a dry structure. This sudden change is followed by a check to the plants, which ends with the flower buds failing.

Another certain cause of failure is allowing the plants to become dry at their roots. In no stage of growth should the soil become dry; it must not only be kept moist on the top, but through to the base. It is easy to err in watering by attempting to give just sufficient and no more. This often results in their getting too dry. It is safer to give a little too much than too little. At the same time the soil must not be rendered sour and unsuitable for the roots to work in by saturating it with too much water, or the buds are equally certain to fall.

Overfeeding with strong stimulants in the form of liquid manure will end in the plants throwing their buds. Always supply liquid manure in a weak state, and soot water is beneficial if given clear, not muddy. If less liquid manures were given, and some reliable artificial manures applied to the surface of the soil in small quantities, at intervals of three weeks or a month, fewer failures would follow. Camellias must have fertile soil, or they suffer from exhaustion, and the buds will fall the same as when overfeeding is practised.

Unripened wood is a certain cause of the buds falling. The wood ought to be brown to the tip by the time the buds commence forming, then other cultural requirements being supplied, the plants will be certain to retain them. Wood that is green part of its length instead of brown will retain the buds until a certain period, or until they attain a certain size, when off they come. Plants that make their growth early always set a greater percentage of buds, and also produce finer flowers than those that make their growth late in the season. Conditions of health and the food supply being equal in both cases.

Strong insecticides after the buds are formed invariably result in the plants casting them. One strong application might result in the buds falling, while two or three weaker ones might be given without the slightest injury. Plants that are allowed to become covered with insects are liable to lose their buds, however well they may be treated in other respects. If insects exist sponge them off, or brush them from the old wood, using a weak solution of softsoap and water, fir tree or lemon oil. After flowering they may be washed with a solution of petroleum and water, at the rate of 1 oz. of the former to each gallon of water; this will destroy scale and eradicate it, if persisted in during the season of growth. These are some of the chief causes of Camellia buds falling, but any check or a combination of causes will bring about the same unsatisfactory results.—Wm. Bardney.

PLUM FUNGI.

Up to last year I had not been seriously troubled with fungi attacking Plum trees. I had made acquaintance with the gum fungus, which I have treated of in a previous article, also with "Bladder Plums," due to the fungus named Exoascus Pruni. This is fatal to the young fruit, and it is prudent to cut off and burn the infested parts, or the spores of the fungus will be scattered far and wide.

Plum trees also suffer from a form of mildew, which is also more or less destructive to the fruits of the Pear, Apple, Cherry, and Apricot. This is named Oïdium fructigenum; the fruit of the Plum is sometimes made quite white with the fungus. The only palliative measure, as no cure is known, is lifting and planting in fresh loam. Application of freshly slaked lime mixed with the surface soil when the trees are lifted as deep as the roots allow is useful. Old mortar rubbish is no use, for it is essential that the lime act at once on the inert matter, whereby nitrate of lime is formed, presumably by the action of minute organisms—viz., bacteria. One-sixth of lime is a proper quantity, or 2 inches thick to mix with 10 inches depth of soil. The lime passes into the trees, hardens the wood and buds, which assists the fruit to repel the fungus.

Plum leaves are sometimes covered with a white coating of the nature of an Oïdium, but the fungus is named Podosphœra tridactyla. This, though not uncommon, is not particularly injurious, and yields to a sulphur and lime solution—viz., equal proportions of sulphur and quicklime with double the weight of both of water, or 1 lb. of sulphur vivum and 1 lb. of quicklime to five pints of water, boiled ten minutes in an earthen vessel, stirring all the time, allowing to settle, then pouring off the clear liquid, and keeping in well corked bottles. Half a gill may be added to three gallons of water, mixed, and applied with a syringe to the infested trees. Syringing with a carefully prepared sulphide of potassium is equally if not more efficacious. My chief object in writing is, however, to draw attention to a greater enemy than the

foregoing, which has defoliated some Plum trees and spoiled their crops. This I shall describe as the "red fungus." The leaves of the trees attacked have fleshy, somewhat irregularly rounded red spots, which scieutists state are the work of a fungus named Polystigma rubrum. These spots enclose numerous asci, each containing several spores, besides which there are sporidia, and both open by mouths on the lower surface of the spots. If a thin slice of the leaf be examined with a microscope the tissues are seen "choked" with the filaments of the fungus, very differeut from a thin slice of a healthy leaf similarly examined. The fungus takes its nourishment from the leaves, the measure of injury being proportionate to the number of the spots.

Last year a few red spots only were noticed here and there on the leaves. The enemy was despised—it was in our power and allowed to escape. Nothing is so fatal, for when plunder is the object the few that are treated with immuuity are certain to increase incredibly and beset the host plant. I have ever found it so with red spider, thrips, aphides, grubs, caterpillars, and fungi. Let those and other pests have their own way and they soon show what numbers can effect in devastation. Neglect of removing and burning the few leaves that were infested with the red spots in 1887 resulted in 1888 in the red spots being more numerous on individual leaves; and so many of the leaves were attacked that to pick off the worst infested meant stripping the trees as bare of leaves as the caterpillars had the Apple trees outside. The Plum trees are in a glass case having a south aspect. It was simply a matter of surrender—letting the fungus have its own way. Well, it caused most of the leaves to fall early, in fact the trees were as good as defoliated by early September. That the fungus appropriated the nourishment in the leaves and prevented them performing their proper functions was exhibited very decidedly in the fruit, which, though it swelled to a good size, began to shrivel at the stalk end when under ordinary circumstances it should have perfected, and it was unfit for food.

Whether the fungus took possession of the fruit as well as the leaves I am not capable of stating, yet the fruit had minute red spots at the stalk end, and internally the flesh was pervaded longitudinally by threads, which had destroyed and given it a reddish tinge. The fruit was remarkably sweet to the palate at first, but soon assumed a bitter and nauseous taste; most disagreeable, however, when swallowed, the stomach being made very uneasy. I have noticed similar sensations follow eating Figs that had red spots at the end of the fruit, also Peaches with one or more similar red spots at the apex, and very commonly in Melons with spots on the fruit. The flesh in all cases shrinks where the spots are, and ultimately decays. Such fruit ought never to be eaten; but what relation, if any, there may be between the red spots on the Plum leaves and the diseased fruits I do not know. There was nothing for it but to collect the leaves as they fell and burn them. Some say there will not be any fruit another year. That remains to be seen, for the trees have ample fruit buds, and the wood is firm and ripe. The border had a dressing of hot lime last autumn, and farmyard manure, and I shall expect a full crop of Plums?

How came the fungus? It attacked the upper part of the trees and descended. Perhaps it came through the top lights—certain it found a fitting host come from whence it may, and that is only what is needed to be known on that point. From the Plum case it spread to trees on a wall with an east aspect, and took the whole wall before it from the Plum case onward. The tree next the Plum case on the wall is a Purple Gage, which was most affected; the fruit, however, ripened, the leaves falling soon after. The fungus was less and less as the distance from the Plum case increased, and in effect was most disastrous to the dessert varieties; in fact Victoria escaped, and so did Coe's Golden Drop, and finished at the eighth tree from the Plum case, where was a break in the continuity by Pears before other Plum trees were reached. All other Plum trees were free from the fungus, both against walls and in the open. "Oh! but they will be attacked another season." Perhaps so, but unless the season be such as it was in 1888 from mid-June to well-nigh September, sunless and continually dripping, I fear no red fungus damaging Plum trees to the prejudice of the crop, neither on the trees that were so badly attacked this season, as it seems to revel in disorganised tissues, badly elaborated unassimilated sap. The fact of the matter is just this—the season was cold and wet, and we kept the Plum case much too close to oblige some Tomatoes, with the result that we had neither Plums nor Tomatoes. That comes of serving two masters and getting satisfaction from neither. Everybody knows Plums like cool treatment and as much air as a mountain Daisy, and then there is no healthier or more fruitful tree grown under glass; but, of course, everybody knows all that and much more, only I do not remember anything particular being recorded of the "red fungus" attacking Plum trees to the extent of their defoliation and destruction of crop.—G. Abbey.

AMONG THE NOVELTIES.

I tried a fair share of the new varieties of vegetables, &c., during the past season, and now proceed as heretofore to give my experience of them, trusting my few remarks may be a guidance to those who soon will be looking over their catalogues of seeds, each with very glowing descriptions appended to every novelty. May I ask why it is thought necessary to state that the new variety is better than any other in cultivation? This is the rule of some in describing their novelties, but I think the old stager soon finds out on whose description he can rely, and in whom no reliance can be placed. For myself I usually attach more importance to a soberly worded one than to the "lick all creation" style of thing we are growing accustomed to see—the wonderful crop of Potatoes delineated in an advertising illustration last season to wit. To my task.

Tomatoes.—Of these I tried several new strains, Henderson's Dwarf Champion, Thorburn's Volunteer, and the older varieties Acme, Trophy Improved, and Livingstone's Perfection, the seed of which I received from New York. Champion is a dwarf, very strong stemmed variety, which is supposed to support its own weight, but which it failed to do with me. The fruit is of the Acme colour, and I have discarded it. I had one plant of Acme bearing scarlet fruit, and as it is a good cropper and the fruit of good flavour I kept the seed. I do not eat the fruit raw, but as I found the slugs only ate Acme and the Old Red, I concluded they were the sweetest, the slugs being, as I know too well, good judges of quality. Volunteer is good in every respect, scarlet, and of the Perfection type. I shall grow it again. Livingstone's Perfection and Reading Perfection are exactly the same. I also received a packet from Mr. Gilbert of his Surpasse, and this I found a heavy cropper, the fruit being handsome and of good colour. They do not run to a large size (with the exception of a few plants which bore fruit of a different type), and I found them the most saleable of any, for size is objected to here, and I had to sell 10 ozs. fruit as half-pounders to get rid of them. A friend of mine liked Surpasse better than any other, and it will be my sheet anchor in the coming season.

Potatoes.—Laxton's Bouncer and No. 1, Railway Rival, Pink Beauty, Colouel and Captain sent me by Mr. Gilbert were all good, and of these No. 1 is a first class Potato, handsome, great cropper, and early. Bouncer late and good in every way. I like these two best of the six. Pink Beauty is as its name implies, and will be found very useful for a collection. Universal and Table King received from Messrs. Daniels are both good, but the latter is to my mind the best, and will be found to provide good dishes for the table, and the criterion after all is the eating. Ashleaf Seedling, a variety I received from Worcestershire, is, I consider, an improvement on all other Ashleaf Kidneys in earliness, cropping, and appearance. Sharpe's Victor and Duke of Albany were very disappointing this season. Sutton's Satisfaction and Masterpiece were both good, but the former is far and away the best, and if I were to pick out two Potatoes for main crop, I should choose that and Bouncer. Some seedlings, Village Blacksmith, Covent Garden Perfection, &c., were all unsatisfactory, and I have discarded them. Imperator is a good field Potato, but the soil must not be very rich or the tubers will grow far too large for table use.

Ne Plus Ultra Runner Bean is a gem for exhibition, the pods being very long and as straight as a gun barrel.

Rousham Park, New Anglo-Spanish, and Wroxton Improved were the Onions I grew, and the second produced the finest bulbs, and will be found the best for exhibition, but for general purposes give me the last, for the bulbs are thicker, and being more globe shaped will probably keep better. Three better Onions could not, I think, be grown. I had thought Rousham Park could not be beaten.

Brussels Sprouts.—I am trying the Wroxton, but do not consider it better than many other strains.

Sutton's White Heart Cos Lettuce grows to a great size, does not run to seed quickly, and is very good. It will be found useful for exhibition.

In Peas I was most pleased with Sharpe's Victory, the pods very dark green, large, and plenty of them, the height being 2½ feet. The quality also is first rate. The only other Pea worth mentioning is not a new one, but it ought to be grown by all, Wordsley Wonder, which is a great cropper of first quality. The pods are curved and look thin, but when opened they disclose ten and eleven large peas, packed very closely together. This is not all pod and no inside.

Pen-y-byd Marrow cannot be beaten for a gentleman's table,

prolific, and the fruit of good quality. Universal Savoy, early, sweet, and compact.

I am afraid I have trespassed too far on space, and shall be cut down considerably, so pull up and beg the Editor's pardon.—H. S. Easty.

[Granted.—Ed.]

LILIUM AURATUM.

There is a probability of this fine plant becoming as common as the Dutch Hyacinth; few owners of a small greenhouse failing to grow it, and as it can be had so very cheaply, no doubt more of it will be cultivated. The present is the time to secure a stock of bulbs, those newly imported being now plump and full of vitality. In choosing bulbs, the most vigorous stems will be found to be produced by those which are close in the scales and heavy for their size. Indeed, if the bulb be of a good medium size it is doubtful whether the large bulbs are worth the extra money they realise. All things considered, there is perhaps no better time for potting the bulbs than this month; but I have kept them well into spring, and secured healthy plants, which flowered late in the season, and at a time they were very useful.

Some growers complain of the difficulty of establishing imported plants; but if managed as I shall presently indicate, I am sure, from my own experience, that few losses will occur. Imported Lilies, it should never be forgotten, suffer a very great check through loss of roots, a healthy plant never being inactive at the roots. In endeavouring to establish these it is consequently very necessary to treat them gently. I treat them as follows:—The compost employed is very open, such, for instance, as a mixture of loam two parts, leaf soil one part, and sand one part; a little loose peat is beneficial where it is to be had good. The size of pot is of consequence, and here many make the mistake of putting the bulbs in those which are too large. A large plant can be most successfully grown in a pot 6 inches in diameter, and the following autumn will find it filled with roots, ready to be repotted without disturbing a root, a point of great importance. I do not use much drainage, and place just a little of the compost between that and the base of the bulb, so as to leave room for a good surface dressing in summer. When the bulb is placed in position a little more compost is put in about half way up the bulb, the upper portion being left bare. The soil is used in a suitable condition as to moisture, so that no watering is needed.

When all are potted, they are placed in a cool structure and thickly covered with dry leaves, and a mat over these to keep everything neat and tidy. A covering of bracken may be substituted for the leaves; but on the whole, I think leaves preserve a condition of steady coolness better than anything. I find the plants may be left until the end of January or the beginning of February, when, if the weather is open, it will be necessary to examine the soil in case it may be getting dry. A small amount of water given to each will put them all right, especially if the leaves are slightly damped at the same time, and turned back again over the bulbs. By March the rooting process should have proceeded to a good extent, and many of the bulbs will be throwing up their growths. Another watering will most likely be needed, and then a slight surfacing of fresh soil, giving but just enough to bring the soil level with the top of the bulb. Those unstarted will be better under cover awhile longer. It will be noticed that so far the treatment has been of a nature to ensure to the plants a cool moist rooting medium.

I find nothing so damaging as water being continually applied; yet the roots must have an unstinted supply of moisture in order to keep the bulbs plump. That being so, a position where the pots can stand without danger of continual dryness must be sought out. Direct sunshine on the pots is very prejudicial, and where it is impossible to avoid this, a thick layer of moss placed on the surface of the pots will be found useful. As the stem roots are produced some more soil should be placed in the pots, rough bits of turf and peat are best then. At the flowering period the plants will do with less water, but the soil should never become really dry; and as soon as the new roots from the bulb are seen to be in course of production, the plants should be shifted on into larger pots. If properly managed the ball will be completely matted with roots, and without disturbing any of these place the plant in the new pot, so that only a very thin layer of soil will lie between the bottom of its ball and the drainage. This time, and in future years, the bulb will be, of course, covered with soil. The best place to winter the plants I find to be a perfectly cool structure, the pots being plunged and covered deeply with ashes.

As already hinted, the bulb may be for a good time without starting. When this is the case, a very efficient method of growing the plant is to prepare ordinary cutting boxes, or if there are very many bulbs, the bottom of a cold frame, by placing a couple of inches of sifted leaf mould, and on that the base of the bulbs thickly together. A thick layer of moss is laid above the bulbs, and an occasional watering given until a good quantity of roots are formed, when the plants are lifted carefully with as much soil as possible and potted. Very good results follow this rough and ready method.—B.

OLD GOOSEBERRY BUSHES.

There are two good reasons why degenerated bushes should be discarded, the first being that they occupy much valuable space, and the second that they do not give returns sufficiently good to pay for their culture. I have seen many old bushes occupy a space from 4 feet to 6 feet square. A dozen of them would take up more ground than would accommodate a score to thirty healthy trees, and every one of these would give a weight of fruit exceeding that secured from the old ones, while in quality there is no comparison. As everybody knows, old bushes only bear small fruits, thick in the skin, juiceless, and flavourless, while the young ones swell up to their fullest extent, being thin in the skin and full of rich pulp, bringing the highest price in the market, and are most relished at dessert. Gooseberries can never be too large. Possessors of old worn-out bushes may say, "Well, you know, they do not occupy valuable ground, as that piece is good for nothing else." But this is far from being correct. No excuse for harbouring old bushes should be accepted. The fact of the matter is there is no part of a garden that cannot be made to produce good Gooseberries, and the bushes in question would, no doubt, give the best results before they became incapable of doing so. Apart from having healthy bushes, there is no secret in growing the finest Gooseberries. I know cottagers who annually have them as fine as in the largest gardens, and this is certainly not from extra skill in culture, but they have found that the best fruit is invariably produced from bushes that have not begun to degenerate, and act accordingly. Fine young bushes of all the best varieties of Gooseberries are cheap enough to be within the reach of all, and the present season should be taken advantage of to clear out every bush that is past its best.—A Kitchen Gardener.



THE NATIONAL ROSE SOCIETY.

The annual general meeting of the above Society was held in the Hotel Windsor, Victoria Street, Westminster, on Thursday last, December 6th, at 3 p.m., Dr. Robert Hogg, one of the Vice-Presidents, in the chair. There was a large attendance of members, those present including the following:—The Rev. H. H. D'Ombrain and E. Mawley, Esq. (Hon. Secs.), T. B. Haywood, Esq. (Hon. Treasurer), Colonel F. S. Hore, Captain Christy; the Reverends W. Wilks, J. H. Pemberton, Alan Cheales, H. A. Berncrs, F. R. Burnside, F. Page Roberts, F. Gall. and A. Foster-Melliar; and Messrs. G. Paul, J. Rawlins, W. J. Jefferies, E. B. Lindsell, R. Harkness, J. Brown, G. Bunyard, B. R. Cant, A. Prince, C. E. Cant, W. Paul, T. W. Girdlestone, J. Cranston, F. Cant, J. Burrell, W. Rumsey, G. A. Marshall, G. Mount, R. E. West, R. Bloxham, A. Slaughter, E. Wilkins, G. Prince, A. Turner, J. D. Pawle, and H. Appleby.

The business was commenced by Mr. E. Mawley reading the circular calling the meeting, and then, at the suggestion of the Chairman, the minutes of the last meeting were taken as read. Messrs. G. Paul and A. Slaughter were next appointed scrutineers of the ballot for officers and members of the General Committee for 1889, and this proposition induced Mr. B. R. Cant to make a few observations respecting the desirability of more names being submitted for the General Committee to supersede some of the members who rarely or never attended the meetings during the past year. The Rev. H. D'Ombrain explained that it was the rule half the members of the Committee should retire each year, but that they should be eligible for re-election. He further pointed out that the matter had been before the Executive Committee, and if any suggestions of this character had been made then, or names submitted, they would have received every attention. Mr. Cant said he had been unable to attend the Executive Committee meeting in question, and he wished to submit the names of Dr. Budd of Bath, Mr. R. N. G. Baker of Exeter, and Mr. H. J. Veitch of Chelsea, as members of the General Committee. Mr. Cranston thought it was desirable some alteration should be made in the Executive Committee to give others an opportunity of attending. They knew nothing of what had been done, and he considered they were justified in expecting a report of the business performed. Mr. D'Ombrain said in reply it would be unusual and undesirable to publish reports of the Executive Committee meetings. Dr. Hogg called attention to the fact that there was a note on the balloting paper to this effect—"Members are requested to alter any names of either the retiring or newly

proposed members of the Committee according to their wishes." He considered this was sufficient, and he suggested that in future the names of proposed members should be sent in before the annual meeting.

Mr. D'Ombrain then read the following report :—

REPORT OF THE COMMITTEE FOR THE YEAR 1888.

In presenting this report to the members, the Committee do so this year with peculiar satisfaction, it being their very pleasing duty to announce that Her Royal Highness the Princess of Wales has graciously consented to become the Society's Patroness. It is due, however, to their indefatigable Vice-President, the Hon. and Rev. J. T. Boscawen, to state that it is in a great measure owing to the kind interest he has taken in the matter that this honour has recently been conferred upon the Society.

The past Rose season has been a very unfavourable one for exhibitors, owing to the cold, wet, and sunless character of the spring and summer months. Consequently, the flowers staged at the Society's two shows, although as numerous as ever, were as a rule lacking in quality and finish. The Metropolitan Exhibition was, for the first time for some years, held at the Crystal Palace—which in the opinion of the Committee, is, all things considered, the most suitable building in or near London for the purpose. Although not quite as accessible as some other places that might be selected, it, on the other hand, possesses many special conveniences for holding an extensive display of Rose blooms, such as the liberal schedules issued by the Society invariably bring together. Notwithstanding all the drawbacks of an untoward season, it was a grand Show, and under the experienced supervision of the Garden Superintendent, Mr. W. G. Head, all the necessary arrangements were carried out with exceptional completeness. The Provincial Exhibition at Darlington, although somewhat marred by the unpropitious character of the weather, was undoubtedly one of the best Rose Shows of the year, and great credit is due to Mr. E. R. Whitwell for the admirable way in which everything connected with it was managed.

During the past year a supplement to the Society's catalogue, containing a specially selected list of the varieties which have been sent out since the catalogue itself was published four years ago, has been issued free to members. Copies of both catalogue and supplement are now on sale, and can be obtained on application to either of the Hon. Secretaries.

After the annual general meeting last year, a meeting of the secretaries of societies affiliated to the National Rose Society was held, which, considering it was the first gathering of the kind, was well attended. The object of this meeting was to arrange as far as possible a list of Rose shows for the ensuing year. It is sincerely to be hoped that at a similar meeting, which will take place at the same time this year, some more definite arrangement may be come to by which the suicidal clashing of Rose show fixtures might next season be prevented.

Financial Statement.—Taking into consideration the unusually large amount expended during the past year in prizes, and the cost of publishing the supplement to the catalogue, the financial position of the Society remains very satisfactory. The receipts from all sources, the total expenditure, and the balance in the Treasurer's hands, may be seen below.

Arrangements for 1889.—The arrangements made by the Committee for 1889 are as follows :—The Metropolitan Exhibition will again be held at the Crystal Palace, the date being Saturday, July 6th ; while it has been decided to hold the Provincial, or Northern Exhibition, in the Sheffield Botanical Gardens, on Thursday, July 18th. The Society has already held two Rose Shows at Sheffield, the first time in 1881 and again in 1883, and on both occasions has received a warm welcome and generous support. The Committee of the Sheffield Botanical Society have entered so heartily into the idea of a third Exhibition being held there, that there is every prospect of it proving an unusually successful one. Moreover, the locality selected for next year's Provincial Show is centrally situated and easily reached by rail from most parts of the Kingdom.

During the course of next summer the Council of the Royal Horticultural Society propose holding a Rose Conference in their Gardens at Chiswick, and has invited the co-operation of the National Rose Society. It it as yet too early to state anything very definite respecting this gathering of rosarians, but it has been understood that it will follow somewhat on the lines of the recent Apple and Pear Conference. Should this be the case, Roses will no doubt be largely exhibited for the purpose of classification, while papers will be read and discussions held. The Committee cannot but regard a Conference on Roses, such as that suggested by the Royal Horticultural Society, as a step in a direction much needed, and as likely to lead to valuable results, which could not well be secured in any other way. They have accordingly appointed a Sub-Committee to co-operate with the Royal Horticultural Society in this matter.

Members' Privileges.—As in former years, subscribers of £1 are entitled to two private view tickets and four transferable tickets admitting at the same time as the general public ; while subscribers of 10s. are entitled to one private view and two transferable tickets. New members will each receive a copy of the Society's Illustrated Catalogue of Exhibition and Garden Roses, together with a copy of the Supplement issued during the past year.

In conclusion, the Committee desire to present their best thanks to their local Secretaries, and especially to those who by their zeal and energy have contributed so much towards advancing the Society's interests.

The Chairman then requested Mr. Haywood to read the balance-sheet as follows :—

NATIONAL ROSE SOCIETY.

BALANCE SHEET, YEAR ENDING 30th November, 1888.

RECEIPTS.

December 1st, 1887.			
Balance at Bankers	48	3	2
Subscriptions	311	1	0
Donations	5	0	0
Cheque Unpaid last Year	0	15	0
Affiliation Fees and for Medals from Affiliated Societies	74	19	0
From Crystal Palace Company	105	0	0
„ Darlington	100	0	0
Special Prizes	8	10	0
Sale of Catalogues	1	11	8
	£654	19	10

EXPENDITURE.

Printing, Stationery, and Advertising	36	5	3
Postage, Telegrams, Messengers, and Sundry Expenses	26	19	11
Secretary's Travelling Expenses to Arrange Shows	7	1	0
Expenses Crystal Palace Show	8	1	6
„ Darlington Show	6	17	6
Medals	5	8	2
„ for Provincial Societies	59	14	6
Prizes Crystal Palace Show	293	0	0
Prizes Darlington Show	145	5	0
Prizes South Kensington Show last year	0	5	0
Assistant Secretary and Accountant	20	0	0
Balance at Bankers	41	2	0
	£654	19	10

The Chairman submitted the report to the meeting, and proposed that it be adopted, printed, and circulated, which was seconded by the Rev. A. Foster Melliar, and carried unanimously. The Rev. H. A. Berners of Ipswich called attention to what he regards as excessive charges for the Society's medals, and thought some reduction should be made Mr. D'Ombrain said in reply that the National Society only charges the actual cost of the medals.

Mr. B. R. Cant moved, and the Rev. F. Page Roberts seconded, a resolution to the effect that the best thanks of the National Rose Society be communicated to the Committee of the Horticultural Club for the use of their rooms during the past year, which was carried unanimously. It was proposed by Mr. G. H. Marshall, and seconded by Mr. R. E. West, that the thanks of the Society be given to the officers and other members of the Committee for their services during the year, which was carried by acclamation.

A somewhat important matter was then introduced by Mr. E. B. Lindsell in the form of a proposition, seconded by Mr. T. S. Girdlestone, that the word "habitually" be omitted from regulation 13, which reads as follows :—"No person should be allowed to compete as an amateur who habitually sells Rose plants or Rose blooms, nor any person in the employ of a nurseryman. Any objection raised as to the rightful qualification of an exhibitor should be referred to the Executive Committee for arbitration, and their decision shall be final and binding on both parties." Mr. Berners advocated the insertion of the words "at any time" in the place of "habitually." Mr. B. R. Cant thought this was not advisable, as anyone who had sold in the past would be excluded, and that was not intended. Questions were also asked as to whether gardeners selling Rose blooms at shows, or amateurs selling their blooms for charitable purposes, would exclude them from the amateur classes. To which negative replies were given, and Dr. Hogg said if the word "habitually" were struck out the other cases could be dealt with as they arose. The resolution was then adopted.

Mr. D'Ombrain proposed that the best thanks of the meeting be given to the Hon. and Rev. J. T. Boscawen for having interested himself in securing the patronage of the Princess of Wales for the National Rose Society, which was seconded by Mr. Cheales and carried unanimously.

The Chairman then announced that the following had been elected as officers and members of the General Committee for the ensuing year.

President.—The Very Rev. the Dean of Rochester.

Vice-Presidents.—The Hon. and Rev. J. T. Boscawen, Rev. J. M. Fuller, Robert Hogg, LL.D., and James McIntosh.

Hon. Treasurer.—Thomas Burt Haywood.

Hon. Secretaries.—Rev. H. Honywood D'Ombrain and Edward Mawley.

General Committee.—H. Appleby, J. Bateman, Rev. H. A. Berners, R. Bloxam, G. Bunyard, G. Burch, Rev. F. R. Burnside, J. Burrell, B. R. Cant, F. Cant, Rev. A. Cheales, Captain Christy, W. F. Cooling, J. Cranston, Rev. A. Foster-Melliar, Rev. F. H. Gall, T. W. Girdlestone, W. J. Grant, T. B. Hall, R. Harkness, J. Shirley Hibberd, C. F. Hore, W. J. Jefferies, E. B. Lindsell, G. A. Marshall, M. T. Masters, F.R.S., Rev. F. Page-Roberts, G. Paul, J. D. Pawle, Rev. J. H. Pemberton, G. W. Piper, A. Prince, W. Rumsey, A. Slaughter, A. Turner, R. E. West, E. R. Whitwell, E. Wilkins, Rev. W. Wilks, and W. H. Williams.

Hon. Auditors.—J. D. Pawle and F. T. Wollaston.

Some discussion followed respecting the provincial Show for 1890, and Mr. D'Ombrain stated he had been in communication with Mr. Walter Chamberlain respecting another exhibition at Birmingham, and this seemed to meet with general favour. Mr. Berners again brought up the subject of reducing the cost of the medals, and suggested that the matter be referred to the Executive Committee. It was stated that the silver medal of the Royal Horticultural Society, which is now struck at the Mint, costs only 11s. 6d., whereas, when struck privately it cost the Society 24s. Mr. Berners' suggestion was supported by Mr. Cheales and carried.

A cordial vote of thanks to Dr. Hogg was then proposed by Mr. Pemberton, seconded by Mr. Mount, and carried unanimously, bringing the

business of the meeting to a conclusion. A meeting was, however, subsequently held of the General Committee and representatives of the affiliated Societies to make some arrangements with respect to the dates of shows. The annual dinner was also held in the same hotel at 6 P.M., Dr. Hogg in the chair.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 11TH.

THE last meetings of the year of the Fruit and Floral Committees were well attended by the members, but the exhibits were comparatively few. The slight frost and somewhat heavy fog were not favourable for the movement of tender plants, and only those of a hardy nature were, with a trifling exception or two, brought to the hall. The most effective group was formed of finely berried plants of a new Skimmia, and in the vegetable department the greatest extent of space was occupied with collections of Turnips and vegetables from Chiswick. At the close of the respective meetings unanimous votes of thanks were accorded by the members of the Committees to the Chairmen for the year, G. F. Wilson, Esq., F.R.S. (Floral), and Dr. Robert Hogg (Fruit), which these gentlemen responded in pleasant and appropriate terms.

FRUIT COMMITTEE.—Present: Dr. Robert Hogg in the chair, and Messrs. H. J. Veitch, W. Warren, W. Denning, J. Burnett, Philip Crowley, G. T. Miles, Harrison Weir, J. Wright, R. D. Blackmore, Sidney Ford, C. Howe, C. Ross, and W. Marshall. Mr. R. Gilbert, Burghley, sent specimens of the Universal Savoy and Chou de Burghley, both in the best condition, and a vote of thanks was awarded. Messrs. W. & J. Brown, Stamford, sent a seedling Apple of medium size and good appearance, but it was not considered an advance on existing varieties. Samples of *Asparagus Chicory* were again sent by Mr. Willard from Holly Lodge, Hampstead, and presented in a cooked and uncooked state. It was considered a distinct and wholesome vegetable, and accorded a first class certificate. Mr. W. Blackmore, Dereford Gardens, Exeter, sent a seedling Apple Queen of the Exe, bearing some resemblance to Cox's Orange Pippin, but though it was said to keep later it was by no means equal in quality to that variety, and was passed by the Committee. Mr. Campbell, The Gardens, The Priory, Roehampton, sent admirably grown and blanched examples of Batavian Endive, and a cultural commendation was awarded. In the collections of Turnips above referred to, Yellow Finland (Vilmorin) appeared to be the best of the yellow sorts, small, neat and good in quality, and Model (Wrench and Watkins & Simpson) the best of the whites. The Brussels Sprouts which were grown from seed supplied by Mr. Peter Barr were mostly overgrown, and the smaller and compact forms were the most approved, notably the French Superior, Roseberry, Imported and Wroxton, this last, however, being somewhat larger than the preceding, but the knobs were uniform in size and firm. A report of the trials will be prepared by the Superintendent.

The report of the sub Committee appointed to conduct experiments in the cold storage of fruit was presented, and was not on the whole of a favourable character, the keeping properties of some kinds of fruit being materially prolonged, while others, notably Melons and Tomatoes, entirely failing. The chamber was not considered suitable, the atmosphere not being sufficiently dry for the purpose, nor so sweet as was desirable. With a dry atmosphere and equable low temperature there is no doubt that the keeping of hardy fruit can be materially prolonged. The report is placed before the Council of the Society for consideration.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq. (in the chair), and Messrs. W. Bates, H. Herbst, W. Holmes, B. Wynne, R. Dean, J. Dominy, H. M. Pollett, J. O'Brien, H. Ballantine, E. Hill, and Rev. W. Wilks. A number of plants from 1 foot to 2 feet in diameter, of *Skimmia Foremani* were exhibited by Mr. Foreman. The variety was raised at the Eskbank Nursery, Midlothian. The plants were sturdy yet vigorous, with dark green leaves, and quite covered with bunches of bright scarlet berries. Such specimens possess great decorative value. Plants are said to have been uninjured by 32° of frost, and the berries are retained (some of them, presumably) from eighteen months to two years. A first class certificate was awarded. A similar honour was accorded to *Primula Swanley Pink*, exhibited by Mr. Cannell. The plant is of sturdy habit, and the flowers large, well formed, and of good substance, colour delicate blush pink and very pleasing. Mr. Cannell also placed flowers on the table of others of his Primulas, and one of these, Swanley Giant, appeared identical with Great Western, for which Messrs. J. James & Son were accorded a vote of thanks. Similar votes were accorded to Mr. R. Dean for plants of hardy coloured Primroses, flowering profusely; to Messrs. Collins Brothers & Gabriel for Carnation White Andalusia, pure and sweet; to Mr. Odell, Hillingdon, for Cyclamen Rosetta, very fine, rosy mauve; to Mr. Rowe, Nunfield Gardens, Dumfries, for a pale form of Pleione maculata; and to Mr. Heath, Cheltenham, for two seedling Masdevallias.

SOFTENING HARD WATER.

THOSE persons who have a good supply of soft water for horticultural purposes know nothing of the difficulties attached to the use of hard water. The cultivation of plants and fruits where only water from wells or water companies' pipes is obtainable is not readily rendered successful. Water from chalk wells is the worst of all if convenience does not exist to soften it before using, or even to allow it to stand in the sun for a time before applying it to plants. I have noticed that during a hot season, plants—Chrysanthemums, for instance—assume a much more sickly appearance of the foliage than they do in a wet season, which proves to me that cold hard water plays an important part in the colour of the foliage. Particularly does cold hard water affect the leaves of Azaleas at all times of the year. Where nothing but water from chalk is available, the sediment left on the leaves of Crotons, Dracænas, or any other fine-foliage plants which are daily syringed with this water causes much disfigurement, as the sediment is most difficult to remove, even with the aid of softsoap.

To lessen these difficulties means should be taken to soften the water by some process. Where exposure to the sun of a quantity of water, say from 500 to 1000 gallons, in tanks, can be adopted, much may be done to improve hard water by adding some softening matter. Where the demand for water is not so great, the amateur can, by the aid of several petroleum or other casks, insure a supply of softened water. Water which contains a large per-centage of carbonate of lime in solution is bad for plants, and should be softened before using. A very good test for hard or soft water is as follows:—Dissolve a small quantity of good soap in alcohol. Let a few drops fall into a glass of water. If the soap coagulates or thickens, the water is hard; if it does not coagulate, it is soft. If common washing soda be used, at the rate of a quarter of a pound to 36 gallons of water (first dissolving the soda in hot water), allowing the water to stand twenty-four hours, the chalk, which was before invisible, will be precipitated to the bottom of the tank, and the soda acts as a stimulant to the plants. When using the water from the tank care should be taken not to disturb the sediment at the bottom.

Another method of softening water on a larger scale is by the use of anticalcaire, more commonly called milk of lime. To 250 gallons of water add 1 lb. of the latter, allowing it to stand for twenty-four hours, when the chalk will be deposited at the bottom of the tank and the water rendered soft. If the tank were fitted with a tap 6 inches from the bottom the softened water could be run off into other vessels without fear of disturbing the objectionable sediment at the bottom of the tank. Another tankful of water could be prepared also while the former one was being used, thus keeping up a constant supply of softened water. If lime in excess be added to chalk water the water becomes turbid, and the carbonate of lime, formerly held in solution, is precipitated, rendering the whole soft.—E. MOLYNEUX.

PEAS IN 1888.

FOR some years past you have published remarks of mine on the Pea crop. The past season has been peculiar for many crops, some it has suited, and many it has not; but 1888 has not been a bad Pea year. The earliest crops were a little later than usual, but they yielded a long succession: indeed, I do not remember a season when Peas continued bearing so long as they did this summer. As in many former years we had several new varieties on trial, but I do not purpose passing a definite verdict on these, as it was not the best of years for testing their habits and merits. For instance, we had one variety said to be limited to a height of 2½ feet, but it grew 4½ feet, and was no doubt forced out of its normal character by the superabundance of rain and dull weather. Some others which were said to pod and mature in the shortest time on record did not do so, and in these cases I am also inclined to give them the benefit of the doubt, and will try them another year.

Our early Peas consisted of William I., Alpha, Carter's Lightning, Day's Early Sunrise, Kentish Invicta, Alpha, and American Wonder. Carter's Lightning was ready first by seven days, and is very good in other respects; it was followed by Alpha; this by Kentish Invicta; and then came William I.; Sunrise failed to fill at the points, and we have discarded it; American Wonder came in about the middle, but it is too dwarf, and gave only a poor succession.

If the second early varieties are sown with the early crops they will form a useful succession. In this section Anticipation did not equal our expectations either as to earliness or productiveness. Paragon, said to be early, was not early enough; it is prolific, but not of the first quality. Duke of Albany I regard as the best of all Mr. Abbot's productions amongst Peas. It had a good character originally, and retains it still. It resembles Telegraph, but being wrinkled, is superior in flavour to that variety; its deep colour and fine size of pod render it good for exhibition. Evolution is showy, but not a favourite in the kitchen. I have grown Giant Marrow for years, and like it still. Telephone is also good. Stratagem and Pride of the Market do better in a somewhat dry than a wet sunless season, and were long in filling their pods this year. Wordsley Wonder has sustained its reputation. Walker's Perpetual Bearer did not bear longer than several others. Matchless Marrow fat has proved grand in flavour. Royal Jubilee is very large.

pod, but did not fill well this summer. Champion of England and Veitch's Perfection are still amongst the best in flavour, but behind many others in productiveness.

Late Peas we never had later than this year. We sent good dishes to the table until November 9th. Our garden is surrounded by trees. These confine the atmosphere, often resulting in much mildew on Peas. Lynn's Black-eyed Marrow (Dickson's) having been recommended as a mildew resister, two quarts of it were sown the same time as Omega, Ne Plus Ultra, and Latest of All, and besides resisting the mildew it continued bearing three weeks after the others had come to a standstill.—A KITCHEN GARDENER.

ASCLEPIAS TUBEROSA.

COMPARATIVELY few species of the genus Asclepias are cultivated in borders as hardy plants, and perhaps there are few that are really worthy of a place amongst the many attractive plants now grown in British gardens. No doubt can, however, be entertained respecting the merits



FIG. 58.—ASCLEPIAS TUBEROSA

of the plant represented in the woodcut, fig. 58. In warm soils and situations it thrives vigorously, especially if the natural drainage be good, and being readily increased fine clumps can soon be had. The flowers are bright orange-red, and are produced in dense corymbose heads at the tops of the stems, which are clothed with narrow sessile leaves. It forms compact bushy plants, 2 feet or so in height, and it can be increased by seeds or division of the tubers, the latter being preferable and quicker than the other; in fact, seeds are not produced with certainty.

NEW FACTS IN APHIS LIFE.

AMONGST the multitudes of insects that annoy the gardener and the farmer, the aphis tribe, I believe, must occupy the bad pre-eminence of being the most troublesome of all, minute as is their size. Few, indeed, are the plants entirely exempt from them, and though these are often attacked by aphides without being killed, the exhaustive and disfiguring effects of their ravages are sadly conspicuous. Then their rate of increase is so marvellously rapid that were it not for the agency of their many parasitic enemies, and the influence of weather that is unfavourable to them, in a short time they would make the face of Nature a desolation. Prof. Huxley calculates that supposing the multiplication of aphides could go on uninterruptedly for 300 days and no more, "there would be no room in the world for anything else but aphides." This is the more remarkable when we compare what is the weight of an aphis and that of a human being, as Mr. Buckton reckons that two hundred millions of them would scarcely be as heavy as an average man. A forcible instance of the power of little things.

The fact is now well known to many persons who are neither naturalists nor gardeners that twice in the year there occur migrations of aphides, in the seasons of spring and autumn; possibly small migrations do take place at other times, but they are not of particular importance. The spring migration, which is usually during May, is, to appearance at least, associated with a peculiar condition of the atmosphere—an easterly wind, but not a strong one, and a heaviness in the air. On such days country folks are apt to say there is a blight in the sky, and though they may not connect these days with insect migration, in the remark there is more truth than they are aware of. A second, and in most years a greater, migration occurs during early autumn at the end of August or September. This migration, from some cause or another, perhaps owing to the destruction of many aphides by the heavy summer rains, went on to a very small extent this year in several places under my observation, and I expect a like scarcity of them was a general occurrence throughout Britain—out of doors, at least; but it will not do to relax one's vigilance, as insects have a trick of showing themselves unexpectedly. No doubt, in the course of these aërial journeys made by them (and small as are aphides, it seems that they sometimes travel several miles) quantities of them are eaten by birds, drowned, and killed in various ways.

More underlies the habit of periodic migration amongst aphides than we might suppose, and as a rule it seems to have nothing to do with a lack of food in the locality they are quitting. But it is evidently connected with a change of food in some species, though not in all, and as we get additional information about this we shall be the better able to cope with these enemies. Some of the older entomologists had a suspicion that aphides which suddenly appeared in swarms upon a particular species had not always come from some other plant of the same species, but from one very different, and they were right. Siphonophora Chelidonii, so named because it has been taken on the Greater Celandine, and probably occurring in allied species, also infests the Raspberry from June to October. Siphonophora Pisi, a large aphis, usually shining green, but occasionally mealy and brown, clusters by thousands on the Peas of our fields, though it is also noticeable on the common Nettle, the Shepherd's Purse, the Meadow-sweet, and other wild species. One of the aphides infesting Wheat, S. granaria, is believed to migrate during autumn to Grasses, though it is not ascertained where the eggs are deposited which produce the spring brood. A host of different names have been given to Aphis Rumicis from its various food plants. It is the "black dolphin" or "collier" of the country folk, infesting the Bean, but visiting other leguminous plants as well, in autumn, for instance, after retiring to the Furze to deposit its eggs. That notable foe of the Hop, Phorodon Humili, a bright green aphis, breeds in the spring upon the Sloe, probably also on the Whitethorn. There must be some migration in the case of A. Amygdali, the troublesome pest of the Peach and Nectarine, for after visiting the trees in spring, curling up the young leaves, it vanishes frequently for two or three months and reappears numerously during the autumn.

It is a curious circumstance in the history of each individual aphis that it cannot change its food. Naturalists have proved that one of the tribe will sooner die of starvation than imbibe the sap of a different species than that upon which it has fed. Hence when a swarm of aphides has travelled a long or short distance to settle on plants diverse from their former food they die on arrival, but produce a new brood, which continues the succession. The migrations, however, are not associated with the appearance of both male and female winged aphides, by the latter of which eggs are laid to remain unhatched till spring. Towards the end of autumn the females cease to produce living young, the low temperature, as is surmised, causing the development of the winged types and the laying of eggs, by which most kinds are carried over the winter. In some countries where the climate is equable and mild all the year many aphides continue to be viviparous from year to year.

The eggs of most aphides are difficult to detect because they

are flat, and generally exactly the colour of the trunk, shoot, or twig upon which they are laid. Those that have been recognised are observed to be large for the size of the insects. Sometimes they occur in twos and threes, at others in groups of fifty or a hundred.

Sometimes they are placed upon the leaf or flower-buds; for example, we may see them upon the leaf-buds of the Rose, when they are enlarging in February or March, looking like very tiny grains of gunpowder. It is probable that some seasons these eggs hatch out earlier than is generally supposed, and hence the importance of well cleaning, by the syringe and other means, all shrubs or trees which have been infested with aphides before a new brood can appear. We should, however, make a great mistake if we supposed aphides are entirely quiescent through the winter, because that is the season when eggs are found. There are plenty of them lively and active in various places, not only feeding at intervals, but engaged in the work of continuing the species, the females producing living young, wingless like themselves. When bedding plants and other tender exotics, which have been out of doors during the summer, are carried into houses for the cold season, some aphides are sure almost to accompany them, and the warmth favours the increase of the insects. Aphides also live through the winter under fragments of loose bark, and certainly upon several of our common evergreens. A. Rumicis has been found plentifully upon the Ivy at that season, but whether they really succeed in obtaining the sap from its uninviting leaves is uncertain. It is possible aphides can endure a fast, and that from evergreens they migrate to the early growth of fresh leaves along the banks and lanes. But the necessity of attending to plants in houses is shown by the tendency Aphis opima, a large green kind, stained with darker green, has to multiply when it can have warmth and moderate moisture. It haunts several favourite plants, but specially the Cineraria, and does much harm, as it not only exhausts the plants, but seems to exert some poisonous influence upon them. Again, there are aphides that through the winter hide underground, feeding upon the roots of plants, just as the too-well-known Pemphigus Lactucæ occurs upon the Lettuce in summer. And possibly some of the aphides of our fruit trees, when their branches are bare, retire to their roots, or to those of humbler plants close by. All our recent observations upon aphis life indicate how very important it is to give such encouragement as we can to their many enemies of the insect race, which keep down their numbers far more effectually than we can with our best efforts. Thus the Coccinellæ, or ladybirds, are busily engaged, both as beetles and larvæ, from spring to autumn, each slaying its hundreds of aphides, and through the winter they are lurking in nooks and crannies ready for the first appearance of their prey; and it is one objection to some of our modes of aphis slaughter that we kill friends with foes.—ENTOMOLOGIST.

Notes & Gleanings

EVENTS OF THE WEEK.—After the bustle and excitement of the recent exhibitions Chrysanthemum growers and exhibitors will have enjoyed a period of well-earned rest, and this (Thursday) evening the occasion of the National Chrysanthemum Society's dinner will afford them an opportunity of discussing the incidents of the past season. The dinner will take place at Anderton's Hotel, Fleet Street, London, and is to commence at 6 P.M. The events of the week as regards meetings and sales are few. To-day (13th December) there will be a sale of Orchids and Liliums at Stevens' Rooms, King Street, Covent Garden, and of Dutch bulbs at Protheroe & Morris's Rooms, Cheapside. The following day there will be a sale of Orchids at the latter establishment, and of Liliums, Dutch bulbs, Roses, &c., at Smails' Rooms. On the 15th there will be a sale of Dutch bulbs at Stevens' Rooms.

—— THE WEATHER IN LONDON.—The present week has been much colder than the two or three preceding it. There have been heavy rime frosts from 10° to 15° being registered in the suburbs. A dense fog enveloped the metropolis on Monday and part of Tuesday, but has disappeared.

—— GARDENERS' ORPHAN FUND.—We understand that Mr. A. J. Brown, Hon. local Secretary for Sussex of the above Fund, is staying for a short time in Wensleydale, and with the co-operation of Mr. Hall, gardener to Lord Bolton, making an effort to hold an entertainment in Redmire Town Hall in aid of the Fund. Gardeners in the district are invited to assist. The date will be shortly announced.

—— MESSRS. FOSTER & PEARSON, Beeston, send us an OFFICE ALMANACK in twelve sheets, for the different months, and ask us to say that any gardener is welcome to a copy who may not have received one. It is useful for suspending as a reminder of dates, and contains postal and other information.

—— MESSRS. J. WEEKS & Co., Chelsea, remind us of the coming year by a sample of their HORTICULTURAL POCKET BOOK AND DIARY FOR 1889, which they distribute amongst gardeners. It is in a solid leather case, and is strong, convenient, and useful, containing pockets for money and stamps, which we hope will be well furnished; blank pages for notes that may be instructively occupied; and tables of information to which possessors may turn when their memories fail them.

—— MILD WEATHER AND SLUGS.—"A Lanarkshire Bee-keeper" writes:—"The warm weather has been very favourable for destroying slugs and snails, as they were all on the surface and easily dispatched with a little quicklime. Underneath heaps of rubbish left for the purpose many were congregated, a slight dusting of lime quickly preventing their doing further injury to plants and flowers."

—— THE Committee of the CHORLEY CHRYSANTHEMUM SOCIETY have fixed the date of their sixth annual Show of Chrysanthemums for November 22nd and 23rd, 1889.

—— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY to be held at 25, Great George Street, Westminster, on Wednesday, the 19th instant, at 7 P.M., the following papers will be read:—"Note on the Prolonged Spell of Cold Weather from September, 1887, to October, 1888," by Charles Harding, F.R.Met.Soc.; "Report on the Phenological Observations for 1888," by the Rev. T. A. Preston, M.A., F.R.Met.Soc.; "A Winter's Weather at Massowah," by Capt. D. Wilson-Barker, F.R.Met.Soc.

—— A CORRESPONDENT writes:—"The members of the LIVERPOOL HORTICULTURAL ASSOCIATION met for their annual dinner on Saturday, December 8th. There were about 140 members present, and Stanley Rogerson, Esq., Hon. Treasurer of the Society, occupied the chair. The meeting proved a very pleasant one. Mr. R. W. Ker replied to the toast, 'The Horticultural Trade,' and Mr. Bardney and Mr. Powell, Botanic Garden, for 'The Press.' Mr. White, the Chairman of the Society, replied to the toast, 'The Liverpool Horticultural Society.'"

—— WE have received from Messrs. Wood & Son what they modestly call their NOTE BOOK. It must not be understood as filled with blank pages on which notes can be written from time to time, but on the contrary about ninety pages are crowded with printed cultural notes on various subjects, by men whose long and successful experience entitle them to be regarded as sound advisers. The subjects appear to have been well selected, and are generally ably treated, but a few faults are apparent in editing; these, however, not in the least affecting the usefulness of the pages.

—— GARDENING APPOINTMENTS.—Mr. C. Dawson, lately foreman at Ewenny Priory, Bridgend, has been engaged as gardener to Mrs. Saunders Davies, Cilwendeg Park, Boncath, Pembrokeshire, South Wales. Mr. W. Hunt, for the past five years outside foreman at Swanmore Park, Bishop's Waltham, has been appointed to the charge of the garden of the Rev. H. E. Trotter, Ardington Vicarage, Wantage, Berks. Mr. E. White, for fourteen years gardener to Mr. Soames, Cranford Hall, Kettering, after an absence of twelve months at Rock House, Derby, has been reappointed gardener at Cranford Hall, under a new employer.

—— TULIPS AT THE PARIS EXHIBITION, 1889.—We are informed that Messrs. E. H. Krelage & Son of Haarlem, Holland, have planted in the Horticultural Park of the Paris Exhibition of next year six beds each of 225 square feet superficial with late Tulips selected from their new collection of breeders, consisting of upwards of seven hundred varieties. Messrs. Krelage are the first of foreign exhibitors whose installation is established. The Tulips have received a prominent position, as the beds are formed in the large grass plot in front of the Palace of the Trocadero These Tulips, flowering usually about the middle of May, are expected to be ready at the opening of the Exhibition, or shortly afterwards.

—— We regret to learn the somewhat sudden death on Monday last of Mr. Robert Castle of Merton, Surrey, at the age of seventy years. Mr. R. Castle was respected by all who knew him as an earnest well informed gardener of the old school. He commenced his career about 1830 with his father, who then had charge of Mr. Swainson's garden at Cross Deep, Twickenham, an establishment noted at that time for its large collection of hardy plants and shrubs, and which is repeatedly mentioned in "Loudon's Magazine" as "The Twickenham Botanic Garden." Since then Mr. R. Castle has had a varied and extensive practice in private gardens and nurseries in the South of England, his last charge being Orsett Hall, Romford, Essex, which he left at the death of the proprietor, four years ago. He had a wide practical knowledge of and a deep interest in horticulture; he has also been a constant reader and an occasional contributor to this Journal, on the staff of which his son, Mr. Lewis Castle, has been for several years engaged.

—— A well attended and representative meeting of gardeners took place at the Lodge Hotel, Reading, on Thursday, December 6th, for the purpose of forming a Gardeners' Mutual Improvement Association for Reading and District. Mr. Jas. Pound, jun., presided. Letters were read from Messrs. Coombes, Tegg, Wildsmith, and others expressing sympathy with the movement, and their readiness to do all in their power to promote its prosperity. The following officers were elected:—Mr. W. Lees, Chairman; Mr. Turton, Vice-Chairman; Mr. Woolford, Treasurer; Mr. Jas. Pound, jun., Secretary; and Messrs. Tegg, Coates, Stone, Balchin, Fry, Hawkins, Hall, Castle, House, Cloke, Bennett, Butcher, and Hinton.

—— Spring Flowers in December.—At a meeting of the Royal Botanic Society, held on Saturday, Mr. J. P. Gassiott, Vice-President, in the chair, there was shown specimens of twenty-four different kinds of spring flowering plants which had bloomed in the open air in the gardens of this Society, and gathered on December 8th. Mr. R. Dean sends us a number of flowers of coloured Primroses gathered from plants in the open ground on Friday last. They are as bright and fine as we usually see them in April. A Gravesend correspondent, whose name we cannot decipher, sends us a flower of the common field Poppy gathered on Sunday last.

—— Rainfall at Dorchester.—Mr. John Campbell, Micklcover Manor, Derby, writes:—"Has not Mr. Chapple (*vide* page 517) made a mistake in his measurement of rainfall for November—viz., 10·28? The average would be about 3·00 according to the published report of G. J. Symons, Esq. Or has a waterspout fallen over the rain gauge at Cattistock Lodge from the heavens, or by human aid?"

—— Rainfall for November.—Mr. N. F. Fuller writes from Horndean:—I think it would be better if observers of rainfall would state diameter of rain guage when sending in reports. If Mr. A. Chapple's guage is 8 inches in diameter, it would probably account for his measurement. We recorded 5·73 inches for November with a 5-inch guage.

—— Heavy Rainfall.—Mr. G. J. Symons, F.R.S., of 62, Camden Square, N.W., writes:—"Your correspondent, Mr. Chapple, will probably have to live a good while at Cattistock before he again records 10·28 inches of rain in November, the amount being probably not far from double the fall usual there in that month. The rainfall varies so much in different parts of the country that to give the average fall for November accurately would take several pages of the Journal, and I am sure that the Editor would protest. Roughly, the average for November in England and Wales may be said to be between 2½ and 4 inches at all places not in or among hill districts; in such localities the average runs up 6 or 7, and at Seathwaite to nearly 12 inches. Mr. Chapple, and I hope some other of your readers, will be interested in the following totals for November; all of them larger than his. (N.B.—I hope no one will try to get either very large or very small values; we want the truth, and nothing but the truth, and have now very good opportunities for detecting any falsification or practical jokes). Nantgwillt, Rhayader, Radnor. 11·01; Arncliffe, Skipton, Yorks, 11·05; Holne, Ashburton, Devon, 14·74; Seathwaite, Keswick, Cumberland, 22·87. May I add that I am on the point of issuing gratuitously blank forms to every observer known to me, and that I shall be very glad of a line from anyone who is keeping, or is about to keep, an accurate record, that I may help him (or her), and he (or she) may help me."

—— The "Botanical Magazine" for December contains coloured plates of the following plants:—Begonia Scharffi, a South Brazilian plant introduced by Messrs. Haage & Schmidt from the Peninsula of Destierro in the Island of St. Catherine, and was sent to Kew, where "it flowered in September, 1887, producing female flowers, followed in October by male flowers and female buds, and in November by another crop of male flowers." It is regarded as nearly related to Begoniastrum Schmidtiana, and is one of the finest members of the genus. The leaves are a foot or more in length, bright green on the upper surface and reddish below; the flowers are large, freely produced, white, with a few rosy hairs on the outer surface, the peduncles being of a similar colour.

—— The plate of Iris Suwarowi (T. 7029 in the same work) represents a curiously coloured species from Central Asia more distinct than beautiful. It was found by Dr. Albert Regel in Turkestan in 1885, flowered at Baden Baden in 1886, and at Kew and Cambridge in May, 1888. The standards and falls are veined with dull reddish purple on a greenish ground, the falls have a lilac-blue beard.

—— In T. 7030 is given a figure of Pentapera sicula, a pretty Ericaceous shrub from Sicily, Cyprus, and Cyrenaica. In general habit, foliage and flowers the plant is very Heath-like, the small bell-like flowers being borne in drooping clusters at the point of the branches, white with a pink calyx.

—— The curious little Columbian Orchid, Hexisia bidentata (T. 7031) is described in another column, but Primula Rusbyi (shown in T. 7032) merits a note here. It is a species from New Mexico, one of the few species natives of North America, of which the following are named:—P. nivalis, P. cuneifolia, P. borealis, P. egaliksensis, P. mistassinica, P. farinosa, P. angustifolia, P. suffrutescens, and P. Parryi. P. Rusbyi was found in the Mogollen Mountains of New Mexico by the traveller whose name it bears, and subsequently by Pringle. The leaves are long and narrow with a crenulated margin. The flowers are of moderate size, bright rosy purple, in loose but graceful heads. The colour is a particularly pleasing one.

—— A daily paper of December 6th gave the following on the Mild Weather that distinguished the past week:—"A strong and broad current of air continues to sweep across our islands from the equatorial regions of the Atlantic, and unusually mild weather is reported over the entire kingdom. On the continent, however, where light breezes descend from a large anticyclonic system lying over Central Europe, conditions are more seasonable, and as a result some curious contrasts have recently been observed between the weather over England and the state of things prevailing in localities which bear a reputation for sunny geniality. On Tuesday morning, for example, London was 5° warmer than Naples, 7° warmer than Monaco, 9° warmer than Laghouat, in Central Algeria, 11° degrees warmer than Constantinople, 12° warmer than Bordeaux, 14° warmer than Marseilles, 16° warmer than Rome, 17° warmer than Madrid, and 19° warmer than Paris. Yesterday morning very similar contrasts were observed, the weather in the metropolis being 3° warmer than Lisbon, 11° warmer than Nice, 19° warmer than Paris, and 30° warmer than Belfort. Even in the north of Sweden, where the south-westerly current of air has exerted some slight influence, the weather yesterday was much milder than it was over the central parts of Germany and France, Haparanda being no less than 12° warmer than either Lyons or Munich. In the course of the day the thermometer in London reached a maximum of 58°, and yesterday was therefore the mildest December day experienced since 1873, when a similar reading was recorded on the 17th of the month. An examination of the meteorological statistics shows that the thermometer in December seldom rises above 55°, and in the years 1885, 1886, and 1887 it did not succeed even in reaching that level. The warmest December day on record was in the year 1848, when the thermometer at the Greenwich Observatory rose to 62° on the 10th. The reports of last evening gave no indication of any divided change in the weather. The Continental anticyclone remained firmly established, and fresh breezes from the southward or south-westward continued to blow over the whole of the United Kingdom. The 6 P.M. temperatures were above 50° in most places, and at Shields and York the thermometer stands as high as 57°." To this we may add a change occurred on Sunday night last, the 9th inst., slight frost being apparent on Monday morning."

SINGLE ANEMONES.

For insuring a supply of the beautiful Poppy Anemones in spring, than which few flowers are more attractive in beds and borders, or more suitable for the ornamentation of vases, tubers should be planted with as little delay as possible. They are very cheap, and a good display of flowers may be had for a small investment. Should the planting be

unavoidably delayed, the bed must then be covered with fern or straw. Choose a time when the soil is moderately dry, and the day fine. Draw drills across the bed 2 inches deep and 5 or 6 inches apart, and plant the tubers 4 inches apart in the rows. A thin layer of sand scattered under and around each tuber will be useful. As soon as the bed is planted, cover the tubers with sandy loam from a basket or wheelbarrow. Take care that the tubers are placed the right side up, by observing the side that has the old small fibres on it. That side place next to the bottom of the drill. When all are planted and covered the right depth (2 inches), then level the surface with a garden rake. If the plants have any kind of covering and the weather prove mild, the covering should be removed, and replaced on the likelihood of a return of frost, and when the spring sets in remove the shelter entirely.



FIG. 59.—SINGLE ANEMONES.

ORCHIDS

LÆLIA VICTORIA.

At the meeting of the Royal Horticultural Society's Floral Committee at the Drill Hall, Westminster, on November 13th last, Baron Schröder, The Dell, Egham (gardener, Mr. Ballantine), showed a specimen of this exceptionally handsome and interesting hybrid Orchid, and from one of the flowers our illustration (fig. 60) was prepared. This plant resulted from a cross between Cattleya crispa and Lælia Dominiana, the latter being itself a hybrid. Mr. B. S. Williams thus describes the parents named :—

"C. CRISPA.—A splendid free-growing Orchid with one-leaved sub-cylindraceous angulate stems about 1½ foot high, flowering in July, August, and September ; the flowers have the sepals and petals blush white, and the lip white, with a rich crimson stain on the front lobe. A single spike frequently produces four or five flowers, which continue in perfection for two or three weeks. This is a fine plant for exhibition in July and August. The colour of the flower is remarkably attractive, and it always produces a good effect in a collection."

"L. DOMINIANA.—This glorious hybrid was raised in Messrs. Veitch's nursery by Mr. Dominy, and is the result of a cross between Cattleya Dowiana and a species of Lælia, probably L. elegans. It is similar in habit to Cattleya Mossiæ, having short fusiform one-leaved pseudo-bulbs, but the leaves are longer, more in the way of L. elegans. The flowers are as large as those of that species, and splendidly coloured ; the sepals and petals are bright rosy purple, with darker reticulations, and are similar in shape and size to those of C. Dowiana, while the lip is of an intense and beautiful deep blood purple, the rich dark colour being carried to the margin, and the tube only showing a little of the golden venation of C. Dowiana. It is to be regretted that this plant, through being a hybrid, must always be scarce, as its great beauty and distinctness claim for it the premier position among the dark-flowered Lælias. It flowers in August."

Lælia Victoria presents an interesting combination of the characters of the two Orchids above described. The petals are much undulated and folded after the style of Cattleya crispa, the sepals being recurved and also suggestive of the same parent. The lip is particularly beautiful, of an intensely rich rosy crimson or purple tint, narrowly margined with white. The flowers are also very fragrant, and altogether the hybrid possesses ample to recommend it to notice, though it is likely to be scarce for some time to come.



FIG. 60.—LÆLIA VICTORIA.

HEXISIA BIDENTATA.

THE "Botanical Magazine" for December contains a coloured figure and description of this curious little Orchid, from which we extract the following :—Hexisia, or as it was originally, probably by inadvertence, spelt Hexisea, is a small genus of Mexican, Central American, and tropical South American Orchids, of which one species only had previously been figured, the H. imbricata, *Reichb. f.*, (as Diothonæa imbricata) in Lindley's "Sertum Orchidearum," t. 40, f. 1 ; a native of Roraima in Guiana. The genus was first

described as having a closed perianth ; an error corrected in the "Genera Plantarum," where, however, the lip is described as erect.

H. bidentata was discovered by Cuming in Western Colombia and Panama, and subsequently found by Œrsted in Nicaragua. The plant was procured for F. A. Philbrick, Esq., Q.C., in 1887, and flowered in the Royal Gardens in June of the present year.

Description.—Stem tufted, 6 to 8 inches high, stout, branched, formed of fusiform many-grooved internodes 1 to 2 inches long, clothed when young with appressed subacute sheaths. Leaves in pairs in the terminal internodes, coriaceous, 2 to 4 inches long by a quarter of an inch broad, spreading, linear, obtusely two-fid at the apex, channelled above, keeled beneath, dark green. Flowers in shortly pedicelled few-flowered racemes from between the leaves ; pedicels half an inch long, clothed with ovate-acute sheaths ; bracts lanceolate, shorter than the pedicels, which are about half an inch long. Flowers sub-erect ; lip anticous. Perianth an inch in diameter, spreading, scarlet. Sepals ovate-oblong, obtuse. Petals rather smaller. Lip about as long as the sepals, linear-oblong, sharply deflexed from the claw, which is adnate to the face of the column, sides straight, apex obtusely triangular, disk smooth, base fleshy. Column short, side lobes reaching a little above the level of the anther, oblong, obtuse, obtusely two-toothed on the anterior margin. Anther four-celled, depressed ; pollinia four, sub-globose, with slender stalks that are attached to a viscous mass.

FACTS ABOUT PEARS.

As a rule the crops of Pears were comparatively light, and the size of the fruit was also below the average. Owing to the small amount of sunshine we were favoured with this year, many, doubtless, anticipated a late period of ripening, and it was also thought the quality of numerous varieties would be very inferior ; but in addition to Pears ripening very much in due course, the quality is surprisingly good, in fact it was never better as far as my experience goes. Frequently the smaller fruits are uneatable, or, at any rate, of very poor quality, but this season all are alike good, quite the smallest being juicy and sweet, or very much as the larger fruit are found to be. From this it would appear that we are very apt to form erroneous opinions as to the necessity of so much solar heat for this class of fruit, though it may be much more of it is necessary for the thorough ripening of the wood than we had this year. Much the finest Pears are grown on the Channel Islands and in France, but fine as these are they are rarely so good in quality as the comparatively small fruit grown in this country, and this is another confirmation of my theory that, as a rule, Pear trees do not generally get nearly enough moisture at the roots. During a hot summer or in dry hot positions the fruits attain their greatest size, but only those well developed are of good quality, the smaller produce being sour and dry. Those wonderful Chaumontels grown in Jersey, and largely distributed thoughout this country are rarely fit to eat. They form a showy dish on the dining table, but of the dozens I have tasted not one has been fit to eat till the cook has taken them in hand, yet we have had quite small Chaumontels of fairly good quality and comparatively small. Doyenné du Comice and Glou Morceau ripened in this district have proved superior in quality to very fine samples imported. On the whole, therefore, it is very evident we may easily overrate the value as far as quality is concerned of extra fine fruit.

A certain amount of heat no doubt is necessary to aid in the maturation of the crops, but, as I have tried to demonstrate, lack of quality is more often due to poverty at the roots than a deficiency of sunshine. All the while the trees produce plenty of fairly strong lateral growth, many cultivators rest contented and do not think of applying either solid or liquid manure, or even clear water till there are signs of a collapse. Much restricted trees may form abundance of growth and yet stand in great need of assistance at the roots. If better treated in this respect the trees would, providing frosts did not prevent it, produce annual rather than biennial or triennial crops of fruit. Not only are the trees unduly weakened by the production of a fairly heavy crop of fruit, and thereby rendered incapable of performing the same functions in the next season, but much of the fruit obtained is also of second rate quality. In the garden under my charge there is a long sunny wall well furnished by a great variety of cordon trained Pear trees. When I first undertook their management it was thought that many of the varieties were quite worthless, as not more than a dozen out of the fifty varieties grown ever produced fruit fit to eat. All the trees were imported from France, and it was supposed the majority of them required more heat to bring them to perfection than our uncertain climate affords. An experienced fruit grower with whom I talked over the matter suggested that, as the trees must not be either rooted out or re-grafted, the best thing that could be done was to give the roots good solid manure. About this time of the year they were lightly bared to a distance of 4 feet from the wall, a thick dressing of partially decayed farmyard manure being then disposed over them, and the surface soil returned to its old position. A marked improvement was manifested in the weight and quality of the crops in the following season, and this was maintained for several summers after. A repetition of this treatmemt in the early part of December, 1886, has served to sustain this improvement. If we fail to obtain a good crop every season it is not now the trees' fault, as most of them annually form plenty of fruit buds, and the failures are due either to the depredations of birds or the effects of frost.

Well-established fruit trees rarely get so much manure as they really stand in need of. In many instances they are planted in rich loamy soil, and while this retains a portion of its fertility the crops are usually satisfactory. Vegetables, on the contrary, are frequently treated to more manure than is good for them, and if the fruit trees are rooting near they receive the benefit accordingly of what was not intended for them. Instead, therefore, of poisoning the ground with so much manure, which only results in the production of rank, strongly flavoured crops, it would be much more to the purpose if some of the manure was applied to the fruit trees. Those which stand in the greatest need of manure are the wall trees on raised or much-exposed borders. No crops ought to be grown closer than 3 feet from the walls, and it would be very much better for the trees if they were allowed at least another foot of clear undisturbed root-run. In any case all should receive an occasional surfacing of solid manure applied just below the surface rather than being either forked in or laid on the surface where much of its fertility would be wasted ; and well-established trees pay for the application of liberal supplies of liquid manure both during the winter and when the roots are active. A good food supply, coupled with abundance of moisture, keeps the roots near the surface, encourages productiveness, and insures the formation of valuable crops of fruit. It does not follow that because I recommend this treatment for trees in full bearing that it is also good for vigorous young specimens. These sometimes require checking at the roots in order to cause fruitfulness, but it is not wise to wait till they become stunted (a by no means rare occurrence in the case of severely root-pruned trees) before applying the manure. If solid manure is scarce plenty of leaf soil will be found a good substitute.—W. Iggulden.



CHRYSANTHEMUM BLOOMS DAMPING.

I feel I may say a few words in regard to this subject—viz., Chrysanthemum blooms damping. In the first place, I fully agree with your correspondent, Mr. Hopkins, that over-feeding is the cause of the trouble to a great extent, although I am fully of opinion that the atmosphere has something to do with it. I grew about 300 plants this season, and disbudded to four blooms on a plant, which I may say were very strong and healthy, and was looking forward to having about 1000 good flowers entirely for exhibition purposes. All went well till they were about three parts expanded, and feeding discontinued, when, on examining the plants one morning, I was grieved to see about half a dozen blooms of the Queen family—notably Lord Alcester and Golden Empress—which were about three parts unfolded, covered with a quantity of little brown spots, as Mr. Molyneux styles it in his valuable treatise, resembling dust. I immediately gave more ventilation, thinking there might be a lack of it, and also warmed the pipes. Next morning I was still further grieved to see quite half the blooms affected with the same complaint, and a day or so after nearly every plant more or less was on a fair way to destruction. Suffice it to say that out of my 1000 blooms as expected I only cut about 200 really worth anything. The principal manure the plants were fed with was sheep's dung, with an occasional dose or two of sulphate of ammonia, about twice a week during October. I may say that about half a dozen of the plants were hardly fed at all, and with them damping was not the least visible, nor was it with about 50 plants which were not disbudded, and which were merely fed with sheep manure three or four times during the season. This season, as all Chrysanthemum growers will agree, has been a deplorable one for the "Queen of Autumn" flowers, and I am firmly persuaded the continual wet weather had a great deal to do with damping, the overcharged sappy stems never being fairly ripened. In conclusion, I will just say that as regards sulphate of ammonia, I intend to have very little to do with it in the future, believing it to be a very dangerous and damp-causing manure. Hoping to hear further correspondence on this subject.—C. Simpson.

EARLY CHRYSANTHEMUMS.

Referring to the article on early Chrysanthemums by Mr. W. Piercy at page 490, I think it is time some more definite method of classing these should be found, and perhaps Mr. Piercy might be induced to classify the sorts, particularly as to the period they come into flower in the open borders. I do not suppose I am singular in my experience with regard to these, which is one of much disappointment that many early sorts flower so late as to require the protection of glass in our northern climate. Those that do flower are among the finest border flowers—*e.g.*, Précocité, which begins flowering in July; Madame Desgrange and varieties, which begin six weeks later, beside several Pompons that are pretty but of less value. Flowers which do not come in until October are too late for borders. La Vierge, for instance, is a most useful variety, but it has to be flowered under glass: Roi des Précoces belongs to the same class. Of those named by Mr. Piercy I do not know Grace Attick, but will try it another season. Sam Henshaw has the unfortunate fault of flimsiness and an open eye, and will not do in the north. Elsie is going to prove a good decorative variety, but it only opened its flowers in the beginning of December. Madame C. Souchet is about the same stage as the above.

Some other varieties of the present season, which I like better and are a month earlier, are—Capucine, a very pretty dwarf grower; Madame Jonis Langlois, the earliest to open, of a very pretty shade of rosy violet, dwarf and good; Bettina, clear orange, edged with yellow, I expect will prove a standard decorative sort; Madame Mezard is very distinct, the florets, which are a light violet, are sprinkled over with white blotches; La Tosca is a dark crimson; Condor, white, worth trying. Several other kinds, all of which were selected from the catalogues as early, have not yet flowered.

The present has been a disappointing season, so many sorts having failed to flower, and among these some of the most useful. Elaine, for instance, is generally a failure; Mdlle. Lacroix is flowering very sparsely; Source d'Or, Ornements, Lady Selborne, Simon Délaux, and many others showing scarcely a flower. Of those that have done well are the Rundle family; Queen of England and its varieties; Mons. W. Holmes, a grand sort; Reverie, very good; Chevalier Domage, Sœur Melanie, Mrs. Forsyth, Fair Maid of Guernsey, Julie Lagravère, Peter the Great, and Princess of Teck.

I omitted to say that I have heard very good accounts of a new variety of this year named Margarita, in the way of Elise Dordan, but which flowers throughout the summer and is very sweet scented.—B.

CHRYSANTHEMUM STAKES.

Whether Chrysanthemums are grown for exhibition or home decoration, they generally require stakes, and this fact is often overlooked until they are required, which happens at a very busy time. Where wood stakes are used they are generally in readiness, but where hedgerow sticks are used it is often the reverse. I wish to remind those in charge that any time during the winter is the best time to get them. Now, while the hedges and trees are leafless, it is easy to see which are the straightest and best for the purpose. They can also be used much thinner if cut now than when they are full of sap, as they will not bend about like fresh-cut ones. If tied tight together in bundles they will dry straight. The time can be better spared now than in June or July, when so many things require attention. In visiting several gardens, I have been impressed by this want of timely consideration by noticing stakes used as thick as walking sticks where as thick as lead pencils (near the top) would have been sufficient, and this is important when the plants are required for conservatory decoration.—E.

NEW AMERICAN CHRYSANTHEMUM.

A short time since one of our leading nurserymen sent me a bloom of a Japanese Chrysanthemum which had created much sensation in America this season. I was asked to give an opinion as to its merits. From the note on the same subject on page 514, I think the two are identical, or nearly so. I could not discern any difference between the bloom I saw and Mrs. H. Cannell. The flower in question was a bad one, but it was of the character of the Japanese variety named. The only difference I could see was that the back of the petals were more thickly covered with the long silky hair mentioned in the report from the *American Florist* than in the case of the blooms of Mrs. Cannell, though these have small hair-like particles on the reverse of the florets, these showing a decided tendency to incurve in the same manner as those of the variety named. From the bloom I saw, I was bound to say that not sufficient difference existed between the two varieties to warrant me in saying they were distinct.—E. M.

A WALL OF CHRYSANTHEMUMS.

By this I mean a wall 84 feet long and 10 feet high, the back wall of a spacious lean-to Peach house, a mass of flowers from near the bottom to the top, and no break showing the bare wall. This is to be seen year after year at Berry Hall, Solihull, near Birmingham, the residence of Joseph Gillett, Esq., of steel pen fame, and it is "a sight" worth seeing. The sorts planted are Curiosity, Jardin des Plantes, Gloire de France, Peter the Great, Flamheau, Belle Paule, Fleur de Marie, Baronne de Prailly, Thunberg, Cry Kang, The Cossack, Elaine, Crimson Velvet, of a lovely bright glossy colour; John Salter, Illustration, James Salter, Jane Salter, Fair Maid of Guernsey, Rubra Striata, Dr. Macary, Bronze Jardin des Plantes, Madame de Sevin, Duchess of Albany, Mme. B. Rendatler, Mrs. Bunn, and Comte de Germiny. These are established plants planted in the border against the back wall, close to which a wood trellis part way is placed, but the roots are away into the Peach tree border of the house. In training the plants very little is cut away, as a mass of flowers is the chief object for cutting from. These plants are cut back in January, never stopped, and almost every growth tied in. When armfuls of cut flowers are wanted and Peach house or other walls are at disposal, that is a very easy method of securing them, independent of producing a charming display.

Mr. Milton, the gardener here (the family of Miltons are well known in connection with Mr. Maurice Young's nursery at Godalming), grows a good collection of Chrysanthemums independent of those on the wall, and amongst other newly introduced varieties the following are in fine character with him—viz., Madame John Laing, Mrs. J. Wright, Mdlle. Blanche Pigny, Mawet Postula, Pelican, and Lady Lawrence, a large white, resembling Pelican. Peaches are grown extensively at Berry Hall in spacious well-built houses, each 84 feet long.

Berry Hall also has a celebrity for Coniferæ, a fine collection having been planted many years ago, including several of the rarer species so little planted now. There are fine specimens of Abies invecta (the Drooping Spruce) planted thirty years ago; a fine Picea grandis, 20 feet high; a grand Abies monstrosa, and a Picea magnifica, 15 feet high; and a host of others. An excellent collection of herbaceous plants, including the leading varieties of the Pæonies, are grown here.—D.

M. A. DE LEAU.

The variety I exhibited both at Birmingham and Pontefract under the name of Albert de Leau, should have been named M. A. de Leau. I was also under the impression that it was the Albert Deleau of the N.C.S. The variety in question I had from Messrs. W. Clibran & Son, Altrincham, and am indebted to that firm for the correction. I submit Delaux's description—"M. A. de Leau (Delaux), pure white, as white as that beautiful variety Hélène, but splendid blooms, no empty space, and double the size of flower. It is without doubt the finest white variety ever seen." I consider it quite distinct from Elaine, having more the form and petal of Mons. Astorg, with the pure white of Avalanche.—D. Lindsay, *Otterspool Gardens, Liverpool.*

[Our correspondent is probably right, and his blooms were very fine, answering well to the description. The Albert Deleau of the N.C.S. Catalogue should, we suspect, be Albert Délaux.]

CHRYSANTHEMUM FABIAN DE MEDIANA.

When reading about this Chrysanthemum in the last issue of the Journal, the first thing that struck me was that Mr. Machattie cannot have the true Fabian de Mediana, for he says this variety "has been shown in splendid condition in Scotland this season." When in good condition, Fabian de Mediana is acknowledged to be the best type of Japanese Anemone we have, being so full centred, the disc especially large, while the guard florets hang quite perpendicularly. The colour of these is deep lilac, the centre being blush shaded purple. If your correspondent has the true Fabian, I am at a loss to know how it resembles Duchess of Albany, which is a full Japanese, without the least appearance of an Anemone centre. Has Mr. Machattie been misled with the bad form of the Anemone this season? I have not seen a really good bloom of it anywhere, but plenty which would give an idea that it was a Japanese variety by the entire absence of properly formed quill florets, which are needed to make a typical Anemone. But, then, I have not seen any blooms of Fabian which were at all like the Duchess in colour, of course assuming he alludes to Jackson's variety, that with the orange buff, shaded red florets, this being the variety which is so commonly called the Duchess of Albany. The other variety (Veitch's or Salter's, I forget which) is not much grown. This would more resemble the colour of Fabian, which, in the absence of the distinction which Mr. Machattie does not give, renders the matter more uncertain. Even should the latter be the variety to which Mr. Machattie alludes, there is a wide difference between it and Fabian de Mediana. The former has much broader florets, which fill up the centre, the points of which recurve.

My opinion is, that no bloom of Fabian de Mediana—no matter its form or otherwise—ought to be admitted into the Japanese section under any consideration, because if such a commencement is made, where will the line be drawn? It must, indeed, be a badly grown flower which does not, in some manner, display its true character; therefore, I would say, if it is not fit to be shown in its proper class it is not fit to be shown at all. Even if it were possible to obtain a bloom without any sign of Anemone character, I fancy it would not assist the Japanese section greatly. There are quite enough in the latter family without admitting Anemone varieties. I do not know what the rules are in Scotland regarding the admission of varieties such as Triomphe du Nord into the reflexed class, but I never but twice saw it staged in England in a reflexed stand, and then I was under the necessity of disqualifying them or of passing them, which was nearly the same thing. I do not believe in the fashion of allowing one sort to be shown in two stands which are supposed to be opposite in character. My idea is, give all a place and keep them there, and there only. If such method was practised strictly more satisfaction would be given, and exhibitors would know what varieties to depend upon for the different stands.—E. Molyneux.

CHRYSANTHEMUMS AT SOLIHULL.

One of the most successful cultivators in Warwickshire is Mr. Thomas Hewitt, who retired from the nursery business a few years since, and

now devotes himself to amateur gardening, Chrysanthemums especially. He potted 600 specimen plants this year, but, like many others, a goodly number of his plants were out in that fatal October frost and were terribly punished. Still he has a fine display, growing all his plants on the single-stem plan, many of the flowers being as fine as they well can be. In looking over the collection since I noticed as very good Carew Underwood, La Vierge; a pretty sport from Mdlle. Lacroix; Fabian de Mediana, Madame J. Laing, very fine; Maiden's Blush, Madame Deville, M. Baco, M. Brunet, Marguerite Marrouch, Mdlle. Blanche Pigny, Mrs. J. Wright, President Garfield, Mabel Ward, Christmas Eve, Duchess of Albany, Val d'Andorre, E. Molyneux, Ralph Brockiebank; a sport from Meg Merrilies; Comtesse de Beauregard, Boule d'Or, Mr. Garnar, Florence Percy, a very fine thread-like form of great beauty; Criterion, M. Elliott, and other leading kinds.

Amongst the incurved kinds the following are very fine:—Golden Empress of India, Mr. Bunn, Lord Alcester, Mrs. Dixon, White Venus, and Jeanne d'Arc, Mr. Hewitt has a lovely bright lilac sport from Princess of Wales. Chrysanthemums are grown remarkably well, though Mr. Hewitt does not exhibit; but his collection is "a draw" for visitors. It will become a raised question, however, shortly whether very tall Chrysanthemums are desirable, and if this great height cannot be obviated and dwarfer plants with from three to more breaks with equally fine flowers cannot be grown and exhibited successfully.

My friend Mr. Hughes, Secretary of the Birmingham Chrysanthemum Society, saw at Sutton Coldfield a few days since a group of dwarf plants which were stopped, I think, in May or very early in June, grand in the size and quality of the flowers, and averaging from 3 to 3½ feet in height or so. He was so struck with their style and quality that he told me he should adopt this plan another season. A very large number of specimen single-stem Chrysanthemums are grown in this way. Mr. Comfort, gardener at Knowle Hall, near here, grows 500 plants—and he does grow them too; but in many cases the plants have attained to a great height this year.—D., *Solihull.*

EXHIBITORS AND THE LATE SHOW AT SHEFFIELD.

Owing to the lamentable want of competition in many of the classes at Sheffield reflections have been cast upon northern and southern exhibitors, which, to say the least, are not very complimentary. In reporting the Show the Horticultural Press commented strongly upon the presence of "fear" and the absence of "pluck" on the part of exhibitors. This has since been emphasised by Mr. W. Holmes at the recent meeting of the National Chrysanthemum Society. The *Journal of Horticulture* in particular pointed to the absence of all Liverpool growers as somewhat remarkable, an observation which will be readily endorsed by those unacquainted with the circumstances in which Liverpool growers were placed. From a personal knowledge of the growers and exhibitors of this neighbourhood I am in a position to state that "fear" forms no part of their programme.

During the last Government expedition to the Arctic regions a comic paper, remarking upon the energy of our Scotch brethren, observed, "The first man Captain Nares might expect to find on reaching the North Pole would be Sandy McFarlane keeping a shanty." And although Liverpool growers can hardly be expected to take their blooms to those regions, they certainly are to be found occupying prominent positions on the prize lists of most of the principal shows in the north of England. Of course this fact makes it appear all the more strange that Liverpool was not represented in competition at Sheffield. Had the principal and truly liberal prize been given for the usual twenty-four incurved and twenty-four Japanese instead of the representative collection I have not the slightest doubt that Liverpool at least would have been represented. Anemone and reflexed varieties are but little appreciated in this district, and consequently comparatively little grown. In the collections of those well-known cultivators, Messrs. Mease, Tunnington, Lindsay, Jellico, Heany, Roberts, Edwards, Wilson, and others, I question if a single example of these two sections can be found. In some instances they are not cared for by employers, a point which it is obvious must not be overlooked. Personally, I consider Anemones amongst the most beautiful of all the Chrysanthemums, and might have competed myself for the cup at Sheffield had the requisite number of Japanese Anemones been sufficiently early.

There certainly were other open classes at Sheffield, but 80s. for thirty-six blooms and 60s. for twenty-four is not sufficient inducement to keep pace with the times, therefore lack of competition in those classes is not to be wondered at. Even Chrysanthemum exhibitors are but human, and when one sees a good opportunity of winning a £10 prize he will not sacrifice that for the possibility of winning one of the value of £4. Considering the importance of the first provincial Show of the N.C.S., and the keen interest it was calculated to excite, I am sure the prize schedule of that undertaking was perused by many with feelings of disappointment.—A. R. Cox.

CANKER IN FRUIT TREES.

I must thank Mr. Tonks for his criticism of my remarks on the above subject; but his present statements are general, mine were particular, and are not disproved by what he says. He remarks that he thinks I may be led astray if I rely on analysis of my soil as a guide in estimating the ingredients of manure required to supply its deficiencies. I do not absolutely rely on it, and I would point out that I said that my soil was deficient in soda according to analysis, and that I had found much benefit resulting from an application of soda to Strawberries, the ash of which contains much soda, and I deduced from this that probably an application of it would be beneficial to Apples, which likewise contain a large proportion of soda, and so far I cannot see that I have erred. Mr. Tonks thinks that it is extremely improbable that the iron in my soil is a cause of canker, as the quantity shown in the analysis was not excessive. The analysis was of the top soil in which fruit trees as a rule do well, but underlying this at various depths is a thick layer of what is called here "red pin," and under this again is ragstone rock. It is this "red pin" that is injurious, and by placing all dung on the surface, I endeavour to keep the roots of my trees near the top. It is noticeable that trees planted in fields where the rock is nearer the surface, and the red layer is absent, do not canker although the ground is full of springs, and yet the same varieties canker where the red pin exists.

It must not be imagined that the soil in this neighbourhood is a bad soil for fruit trees, for it is well known to be one of the best and most fertile, yet the trees do well in proportion as the red element is absent, but where it is abundant some sorts will not keep healthy.

The more dung and such manures as furnish humus are applied in preference to others, the better for the trees, as I believe they dissolve the iron in the soil. Mr. Tonks thinks I need not have any fear of the acid in superphosphate producing injurious effects, but doubtless he is aware that I am not alone in this belief. I have had trial plots of superphosphate in conjunction with nitrate of soda and other nitrogenous manures and plots manured with various other manures, and have come to the conclusion that those manures are best for fruit trees which make humus, encourage worms, and do not make the ground hard and unkindly, but render the surface tender.—Walter Kruse.

[An excess of iron in the soil undoubtedly causes canker in Apple trees, and we have seen a young orchard of several acres ruined in consequence.]

GARDENERS' EDUCATION AND THEIR SOCIAL POSITION.

While giving your correspondent, Mr. A. Bighter, every credit for good intentions in writing as he has done on this subject (page 332), I, at the same time, consider his remarks illogical, and his standard of the gardener's social position unjust and delusive. I never before heard or read of a gardener being called a menial servant, or as being only the equal of the scullerymaid and stable helper. In all gardening establishments presided over by duly qualified men the gardener ranks in position next to the steward of the estate, which position, in recognition of his fitness and integrity, the gardener is not unfrequently called upon to fill. Mr. A. Bighter asks, "Why should the gardener socially be considered superior to the stable helper, or treated differently?" Why, indeed? The gardener is a man of responsibility, having the management of valuable collections of plants, fruit trees, &c., as well as the engaging and directing of a staff of men, the formation and planting of new gardens and ornamental grounds, erection of hothouses, and the works requiring forethought, skill, and good taste. I, however, agree with Mr. Bighter in saying that frequently the gardener's position is pecuniarily inferior to the coachman's, cook's, and butler's. In conclusion, I may say that there is not much chance of parents putting sons who have received a university education to learn gardening as a livelihood. As a proof of this, we find very few gardeners bringing up their sons to follow the same employment, they educate them for filling a better social position than that occupied by themselves. This is as it should be, as long as the object of the parent's ambition is within reasonable reach, and the son shows a liking and probable fitness for the position he is destined to fill. Still, the advice which, with the approach of the long winter evenings, is annually given in the *Journal of Horticulture* and other gardening papers to young gardeners to improve their education is sound and practical, because there is no disguising the fact that the well educated practitioner has an advantage over the imperfectly educated one.—H. W. W.

UNSEASONABLENESS OF THE SEASON.

A RETROSPECT.

I was going to send to the *Journal of Horticulture* a long list of flowers in full healthy blossom in Herefordshire, varying from well-developed blossoms of the Pear to the humble Daisy, which is spangling on lawns in such profusion as to tempt the school children to thread Daisy chains. And then, too, the Chrysanthemums turned out last spring in any odd quarter like old horses to take their chance. Who have not had their vases filled with these charming flowers of a variety and distinctness one finds perhaps in no other flower but Queen Rosa, whose majesty, by-the-by, has been so long and grievously outraged by months of cold and wet weather that she has not recovered to hold as usual her second court this autumn.

My chief motive in writing is to ask if any of your readers, who like myself have passed the broadly defined epoch of middle age, happen to remember how nearly the weather of 1888 resembles that of 1860? I was leaving that year my first curacy, and so the period comes to be well fixed on my memory. Yes, well do I remember how the hay and corn harvests were interrupted, and more even than this year blighted and spoiled through not passing through the bright interval of June weather we have been blessed with this autumn. Just the present mild weather, abnormally high both as regards night and day temperature, was kept up in December 1860 until Christmas eve, when the severest frost of

modern times set in. Writing from memory I forget how many degrees below freezing, but as the question raised at the time quite a controversy among meteorologists I will let sleeping dogs lie. *Absit omen*, for the effects of that frost and previous open weather I never wish to see again, for vegetation with wood so unripened and full of sap stood no chance. Even the common Laurels were cut down to the ground line, Roses everywhere were destroyed. I had just before removing sold several hundreds of standard Roses—Manettis were indeed rare in those early days—to King's Acre Nurseries, and never realised a penny owing to Jack Frost claiming them all. I also remember George Paul *fils*, as he was then, surprising me the spring following by a remark he made (it would not in the least now), when I alluded to my loss, though I need not say he spoke in general terms, "A very good thing; it will weed out the rubbish which we can't." I will not prophesy because, as Brother Jonathan says, I do not know; but every prognostication leads, I believe, to the anticipation of unusually severe weather with, if not before, the new year, and if so, which God forfend, then there will be a "weeding out" with a vengeance.—HEREFORDSHIRE INCUMBENT.

DOLLOND'S IMPROVED THERMOMETER.

THE eminent firm of opticians of the above name have sent us a very useful boxwood thermometer for gardens. It is customary when reading thermometers below freezing for gardeners to count so many degrees of frost. This is arrived at by a little mental calculation. This thermometer assists the process, indeed almost obviates it, for a scale below the tube indicates the number of "degrees of frost" in addition to the ordinary figures that indicate the temperature in the usual

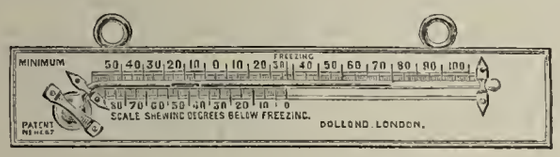


FIG. 61.—DOLLOND'S THERMOMETER.

way. The small figure shows the two scales, and the instruments (which are advertised) will probably become favourites with gardeners, as they are good and inexpensive.

FIRM AND NARROW VINE BORDERS.

WHEN I wrote on the subject of narrow Vine borders several weeks ago I did not anticipate such a free response to my observations. It may be remembered that my remarks were not the outcome of vague theoretical notions, but were founded on accomplished facts, and as the authors or founders of these facts were given, and as not one of them has questioned the accuracy of the narration, I feel myself on tolerably safe ground; and certainly my confidence in firm and narrow Vine borders has not been shaken by the very fair criticism that they have elicited.

I have no time for turning back to the several issues of the Journal which contain replies to my letter, so cannot refer in detail to the points raised. Nor is this necessary, for so far as can be remembered only two of them call for comment. One is the expression of a doubt as to the lasting qualities of narrow borders, and the other the possibility of the soil being made too firm for free penetration by the roots of Vines.

In respect to the quick exhaustion of narrow Vine borders that seems to be feared—I forget by whom, but that is immaterial, as it is not persons but principles with which we have to deal—I think I recorded an instance of a Vine planted in a narrow strip at the end of a house bearing more and better Grapes than any Vine of the same variety grown in the same house, but planted in a large and costly border in front of it, and I also either stated, or intended stating, that the productive Vine in the narrow border that cost nothing outlived two sets of Vines and two new and wide borders, for the making of which scores of tons of soil were carted from a distance of a mile at least, and the cost of which must have been very considerable. I have recently been to the garden referred to, and pointed out to the gardener now in charge the aperture in the woodwork through which the Vine was introduced that gave such a good return, and which was planted in the natural soil in a strip not 2 feet wide between the house and the path. As may be expected he was a little interested when he found he was on the "spot" that he had seen referred to in the Journal, but not precisely indicated. And why not? may be asked. Well, because of an indisposition to reflect on a previous gardener who had incurred the cost involved in making two new deep and wide borders, and yet failed in producing anything approaching such Grapes as were borne by the Vine for I cannot say how many years, but twenty at the least, in the narrow one.

Do not let it be supposed that it is suggested the roots of the productive Vine in the narrow unprepared strip of ground were confined to it. Roots were there as thick as a mat, attracted and increased probably by a heavy layer of manure spread on every autumn, hidden by a sprinkling of soil, and fed by many a gallon of liquid manure, but others we may be certain wandered away. Equally certain, however, it is that they had firm soil to contend with, because they had to go into or under a gravel walk which has existed for probably a hundred years, or nowhere, for inside the house a flight of steps leads to a sunken path much below the level of the ground outside, and, moreover, at that time there was a flue between the path and end of the house that I have many times seen red hot, and it is not very likely that the roots would pass through that, as the "bottom heat" would be rather too much for them. Wherever they went, therefore, they must have had to penetrate soil that had not been disturbed for generations. But it was not of a nature to run together like cement, and this brings me to some remarks of, I think, Mr. Arthur Young.

I have great respect for Mr. Young, with whose work I am quite familiar, and it justifies me in ranking him amongst the best of British gardeners. But even the best are caught napping at times. Though two fifteen or sixteen-stone men might jump on the Vine border at Cardiff Castle with impunity, it does not follow they might have a similarly safe dance on the Abberley soil in which Vines may be planted. Nor is it very likely either of the two heavy weights would do so, any more than they would jump about on the ground in preparation for an Onion bed like a pair of lumbering kangaroos. It is not improbable that the Abberley soil runs together very much like cement under a hot sun after a drenching rain. If this is so, the stamping process would be a work of supererogation, and if two sixteen-stoners were to be seen waltzing on such soil for firming it, it would savour of an example of zeal overrunning discretion. So many Vine borders are dug yearly and left so light that when stepped on deep impressions are made, and it is the opposite of this that is recommended for the subdivision of roots, and the consequent increase of absorbing points for extracting nutriment for the sustenance of Vines. That is what is meant by firm Vine borders.

As to the question of restricted root space and its results under skilful management, an example may be cited of Vines in pots. I am a believer in facts, and when I see, as I have seen, bunches of Muscat Grapes cut from a Vine in a pot, weighed, taken to a show, and place the fine examples cut from the gigantic Vines in the great vinery at Longleat in a second position, I am bound to recognise the efficacy of narrow borders. But in such borders the Vines must be fed, and they can be fed without souring the soil, which is no small advantage in the production of first-class Grapes.

How long Vines may be kept healthy and profitable in a border, say 6 or 8 feet in width, or even less, I am not able to say; but no doubt when the roof does not exceed in length of rafter half the width of the border they can be made to bear satisfactorily for a generation at least; and if the roots are pruned as the wood is pruned and new fibres formed in good soil, as new wood is produced after the manner described by "Bon Accord," I entirely fail to see that they will not continue bearing as long and as well as if they had four times the extent of space to ramble in. Those persons who think that all the roots of Vines that are produced in the summer live through the winter not improbably labour under a misapprehension. It is much more likely that with the fall of the leaves there is a correlative collapse of roots, and that the production of new leaves is accompanied by the emission of absolutely new roots and not the mere extension of old ones. That is a contingency in the economy of Vine growth that has not perhaps received all the attention it deserves, and hence the habit that has been formed of making needlessly large borders for Vines.—SPECTATOR.

NOTES ON HARDY PERENNIALS.

GENTIANA ACAULIS.

IT may not be generally known that the autumn season is by far the most fitting for the successful planting of this fine old perennial, though it may be planted at other times, for it is very accommodating in this respect; but I incline to the belief that autumn planting is the best, for then the soil is uniformly moist, and the atmosphere heavily laden with moisture also, and this combined with the usual rainfall at this season of the year, having a tendency to make the ground solid about the plants, are all points bearing upon its well-being. I prefer solid planting for all Gentians which produce stoloniferous or underground stems such as this one, and, so far as my experience goes, the plants prefer it too, and this makes them very useful for edgings of a permanent character. We have no other of its class so easily grown and so handsome with its glistening blue flowers, of whose beauty I am still reminded by some flowers, even in November, which have struggled open in spite of the absence of sun. It is essentially a plant for those who love plants for their intrinsic worth rather than for their rarity and costliness; for bright and beautiful as many of our rarer Alpines are, the successful culture is limited indeed, and much still remains to be learnt respecting them.

MONTBRETIAS.

The several species and varieties of these, with which may be coupled Crocosma aurea, should all be planted at once if not already done. The tone of the flowers, and the season during which they are produced, render them very acceptable autumn flowering plants; particularly effective are they when well established and at home. The great secret respecting them is the original planting. This must be well done. No plants more fully delight in a rich, moist, sandy, and well-drained light loamy soil than the members of these two groups, to which add fairly deep planting where they may be free from frost. All these points

require attention before a full measure of success can be attained. In planting, choose a warm sunny position sheltered from the north and east. Take out your soil to a depth of 1 foot, well fork up the bottom. Now give a good dressing of cow manure in the treuch and cover with 3 or 4 iuches of soil. A layer of sharp sand, old mortar rubbish, or the like, may be added with advantage. Then place in your bulbs and cover in with soil. According to the size of your bulbs will the first year's flowering depend, but if you allow them to remain for several years undisturbed you will aunually be charmed with some of the most beautiful plants any garden can boast of. In general appearance they may be compared to a small Gladiolus, growing about 3 feet high, and having spikes of brilliant orange and gold flowers. M. crocosmæflora is probably the best of this group, and has orange-scarlet spikes of flowers. The brilliancy of the flowers of these plants is such as to command attention in any garden where they have become established, and treated as I have here briefly described they are by no means difficult to grow, and at the same time increase very freely at the root, so that by liberal treatment a handsome bed of these charming flowers may soon be obtained. These remarks apply equally to the Crocosma, which has brilliant orange flowers, and may be regarded as among the gems of autumn-flowering bulbous plants for the hardy plant garden.

TRITELEIAS.

I have at the present time a small bed of these in flower, planted late last spring, thus illustrating how a season's flowering of certain plants may be extended and even reversed. In effect the species and varieties of this little group are very pleasiug when in flower, and continue sending forth flowers for a considerable time, and pretty as these appear, they are destined never to become popular ou account of their decidedly objectiouable odour.

COLCHICUM AUTUMNALE ALBUM.

This variety has far surpassed all the rest both in the freedom with which its flowers have been produced, and likewise their longevity. When the early frosts came and made such sad havoc of several acres of Chrysanthemums which were out of doors in this district, this Meadow Saffron was in full beauty, and in spite of frost night after night, this variety alone seemed to resist it. In the same bed with it stood the typical C. autumnale, also variegatum, speciosum, Byzantinum, and others, but all were more or less shattered and damaged by the rain and frost, while the subject of this note continued to produce its snowy white blossoms as though nothing had happened. Imagine such a one covered with flowers of snowy white thickly studded over a carpet, say, of some of the mossy Saxifragas thinly planted, or the dwarf Alpine Phloxes or Pyrethrum Tchihatchewi, Aubrietias, or in short anything which would just give the necessary carpet of leaves to keep their flowers clean in wet weather. That white varieties of certain plants are hardier than the type has been proved by the Lapageria and Camellia, but I have never experienced so direct and positive a proof as this among the Colchicums before, and cousider it worth remembering. The flowers are of such a useful size, and so pure withal, that it should be turned to good account by the florists. They expand with remarkable rapidity in a temperature of 60°, and quite took a visitor by surprise the other day, for whom I had plucked a few flowers which were in the bud, to find them fully expanded five minutes later when he had entered the greenhouse. Even when plucked they may be counted as among the most durable of flowers, and when I say that their flowering has continued unbroken for quite two months—not in ones or twos, for the flowers come in quantity from each bulb or corm—I think they may safely be regarded as among our best and most useful hardy plants, such as merit a more extended cultivation. The fact of their being quite hardy and remarkably cheap should be points favouring their general adoption. As a margin to large shrubberies or the like, or for the purposes of naturalisation, all the members of this group are very pleasing and effective —J. H. E.

NOTES ON GRAPES.

I READ with interest the notes on Grapes by your correspondent, Mr. H. Dunkin, on page 419, and while generally agreeing with him, I must take exception to some of his statements. One is, that Black Hamburgh will colour quite as well in dull as in bright weather, and he advises shading at colouring time if the weather be very bright. I have seen Black Hamburgh Grapes this year at several places, and they have not been well coloured. In some cases, where grown alongside of Alicante, the latter has been the better coloured of the two. In our own case in the late vinery Black Hamburgh, which promised well for a time, did not finish in colour as well as Alicante or Lady Downe's. Again, if this Grape colours quite as well in dull as in bright weather, why do we see so many "red" Hamburghs in the market? I do not think we could have a brighter summer than 1887, and yet there was no need (in our case, at least), to have resort to shading.

With regard to Madresfield Court cracking, and front ventilation, I think your correspondent is in error when he states that in a succession of wet days the moment the front ventilators are opened the damp air finds its way into the house and cracking takes place in a few hours; but when the front or bottom ventilators are at once closed and more heat kept in the pipes, cracking is arrested, and it is want of bottom ventilation that has to answer for want of colour in Madresfield Court. I maintain that bottom ventilation will not cause Madresfield Court to crack if it is given judiciously. When visiting the gardens at Ferneclough in early summer, Mr. Herd, the gardener, told me he always left the front ventilators open a little night and day, and is never troubled with cracking, and he grows this noble Grape as well as anyone need wish to see it. He maintains that if there is sufficient heat in the pipes the air coming in at the bottom is warmed before it passes through the house and up to the Grapes. Be that as it may, I did not observe a cracked berry then, nor when looking at them a few weeks ago. They were all well-finished bunches about 4 and 5 lbs. in weight. It is only right to say they are not so dark in colour as in brighter summers.

We took the hint, and have left front ventilation on our vineries ever since, and have not observed a cracked berry. I maintain this is sufficient proof that bottom ventilation will not cause cracking in Grapes. This is a very wet district in this part of Lancashire, and should be a good test of the theory put forth by your correspondent. I believe we would have less of cracking and scalding if a little ventilation were left on in front night and day, and plenty at the top during the day at stoning time, with sufficient heat in the hot-water pipes to maintain the desired temperature.—G. HILTON.

THE NATIONAL AURICULA AND THE NATIONAL CARNATION AND PICOTEE SOCIETIES.

A FULLY attended meeting of the members of the Committee of the London Societies took place, by the kind permission of the Horticultaral Club, in the rooms at the "Hotel Windsor," on Tuesday, the 11th inst., the Rev. H. H. D'Ombrain in the chair. The minutes of the last meeting having been read, it was resolved that the offer of the Council of the Royal Horticultural Society to give the sum of £10 to each of the Societies be accepted, and it was arranged that the Exhibition of the National Auricula Society should take place in the Drill Hall, Westminster, on Tuesday, April 23rd, in connection with the meeting of the Royal Horticultural Society on that date; and that of the National Carnation and Picotee Society on July 23rd, also in conjunction with a meeting of the Society. The Council having expressed a desire that something in the form of a Conference should take place at each of the Shows, having reference to the particular flowers exhibited, by way of imparting additional interest to the Society's meetings, a sub-Committee, consisting of the Rev. H. H. D'Ombrain, Messrs. Selfe Leonard, R. Dean, and J. Douglas, was appointed to make the necessary arrangements and report at a future meeting of the Committee. The schedule of prizes offered at the Exhibition of the National Auricula Society was passed in the form in which it appeared at the last Show, and a few alterations were made in that of the Carnation and Picotee Society. It was decided that yellow ground flowers be no longer shown with selfs and fancies, as there is a class for them. That for twelve blooms was reinforced by one for six blooms, it being understood that yellow selfs can also be shown in these classes. Mr. Douglas having drawn attention to the fact that there is in the hands of the Treasurer a balance from the two Societies amounting to £40, suggested that a portion of this should be invested as a reserve fund, and eventually it was agreed that £25 be set apart for the purpose of forming a reserve fund, it being left to the Rev. H. H. D'Ombrain, Messrs. Selfe Leonard, and J. Douglas to make the best investment they could. The proceedings closed with thanks to the Horticultural Club, and also to the Chairman for presiding.

MEALY BUG IN VINERIES.

HAVING read with interest the excellent articles which have appeared in the Journal on "The Vinery in Winter," I thought I would venture to state how I got clear of that terrible pest the mealy bug.

A little over two years ago, when I obtained my present situation, the vineries, of which there are two, were terribly infested with the pest. The Grapes in one of the houses were so bad that I had most of them burnt, only leaving a few that were clean to ripen. Some may say, Why not burn Vines too, and plant again? which, for my part, I would have gladly done; but there are always two sides of a question. The place was taken on a lease for a short period, so it could hardly be expected that we should plant and grow young Vines for a new tenant, so I had to do my best to eradicate the pest.

As we had other duties pressing, it was almost Christmas before we had a start to clean. We had some very hard frosts during the month of December, and it was welcomed inside the vineries, throwing the

doors and ventilators wide open. Commencing cleaning operations, I had everything moveable taken outside the house, thoroughly washed and soaked with petroleum, and laid aside until wanted. Then taking down the rods, pruning them, and scraping off all the outer bark with a blunt knife, had them tied along the front and to one end of the house, and commenced at the other end to scrape all the loose paint off the ironwork, cleaning two sashes at first, washing them with softsoap and water as hot as we could bear, scrubbing well with a hard brush every crack and crevice, taking the Vine rods as we came on them, and washing them the same as the house. After we had gone over everything under the two sashes, not forgetting the end and back wall, we had the garden engine filled with water, and to every 3 gallons of water we added ½ lb. of petroleum, keeping it well stirred, applying it to every part with great force, including the Vine rods underneath those two sashes, and so on in the same way until we had been over the whole house. After that I had a few inches of soil taken off the inside border and fresh substituted, and then gave the house two coats of paint, and the back wall was washed with hot lime, and that finished one house, and the other was done exactly in the same form.

When starting time came I was much afraid I should never see life in the Vines again, but they came away very well. I must admit they did not carry a full crop of Grapes the following year, but they were very creditable, and not a bug to be seen, although I scrutinised them closely. I may say that petroleum, softsoap, and soot are the three best insecticides I ever tried.—N. B.

REVIEW OF BOOK.

The Rose Garden. By WILLIAM PAUL, F.L.S. Ninth Edition. London : Kent & Co., Paternoster Row.

MR. WILLIAM PAUL has contributed ably and liberally to the literature of Horticulture over a long period, and his works on various subjects afford evidence of thought and care in their preparation, and of the possession of scientific and practical knowledge by their author. Naturally his chief writings are on the Rose—"Roses in Pots," "Roses and their Culture" and "The Rose Garden," have proved their wide acceptability, six editions of each of the two former having been published, whilst the latter has reached a ninth edition. "The Rose Annual," also issued over a series of years, was remarkable for its beautiful coloured plates, as well as for the excellence of the letterpress matter. At present, however, we have to direct attention to the latest and best of those works—the ninth edition of "The Rose Garden." This is in two forms—one royal 4to, with twenty coloured plates and sixteen full page engravings ; the other imperial 8vo, without plates and large engravings ; but both have eighty woodblocks in illustration of the text. To the former we shall more particularly refer, as it is a distinct departure from the previous series, and a bold and beautiful advance on them all.

It is in every way admirable, paper and printing being of the best, illustrations clear, and the coloured plates of Roses unsurpassed for fidelity and finish, and their beauty is well displayed on the ample space the pages afford. These, it may be said, are of the same size as the pages of this Journal, and as there are 360 of them, an idea may be formed of the magnitude of the work.

The handsome volume before us, like its smaller predecessor, is arranged in two divisions. I. Embracing the history and poetry of the Rose, the formation of the rosarium, and a detailed account of the various practices adopted in the successful cultivation of Roses in pots and in the open ground. II. Arrangement in natural groups of the most esteemed varieties of Roses recognised and cultivated in the various Rose gardens, English and foreign, with full descriptive remarks on their origin and culture. The comprehensiveness of the work is thus apparent. The matter in previous editions has been carefully revised and in great part re-written. The history of the Rose has been much extended and is very full and interesting, and so well is the work brought down to date that the chapter on new Roses includes the varieties introduced or announced during the present autumn ; and the lists of varieties for various purposes and positions, which is one of the most useful features of the work, have been thoroughly revised, and may be regarded as in every way trustworthy.

Some portions of the matter in former editions we imagine could not be improved ; for instance, the remarks on exhibiting, and the way in which reverses should be met. These remarks have a wider application than to exhibitors of Roses alone, and are so good and pertinent that they are worth reading again and again, hence worth citing. Here, then, is a fragment of the chapter, the moment being chosen when exhibitors enter a show and first see the verdicts of the Judges :—"A feeling of disappointment may arise. Shall we take umbrage when our positions are not so high as we expected? Certainly not. This would be foolish and ungenerous. Let us ask ourselves this question, Which is the more likely, that the censors—men selected on account of their professional knowledge and probity—which, we say, is the more likely, that they should have shown an indifference to or prejudice against our exhibits, or that the owners thereof have been indulging in an overweening fondness? The answer is apparent. And let us ask ourselves again, if there is any disgrace in being beaten? Certainly not. Every place here is honourable. If A produces good plants it is no discredit to him that B produces better. Nor would it always be correct reasoning to say that the latter is the more skilful cultivator. The air, the soil, or the means at disposal of B may enable him to accomplish with ease that which is impracticable with A. If our plants (or blooms) are good, never mind those of our contemporary being better. Are not both engaged in the same work, both interested in the advancement of a favourite flower? Let us persevere, and we may probably reach the summit of our ambition at some future time." At Rose shows verdicts are usually accepted gracefully, but there have been exceptions ; and at some other exhibitions unseemly action on the part of disappointed men has not conduced to the pleasure of visitors, and no harm therefore would be done if the words quoted were printed in bold type and suspended in the offices and packing sheds of individuals who wish to be exhibitors and judges too—awarding themselves the first prizes. But we must pass on.

A new chapter in the work under notice on the "Poetry of the Rose" could not have been compiled without great research, nor could the selections have been made in the absence of literary taste. Examples of Rose poetry are given from Greek, Roman, Persian, French, Spanish, Portuguese, Italian, German, Russian, and English writers, the latter including Chaucer, Spenser, Shakespeare, Herbert, Walton, Fanshawe, Cowley, Waller, Cowper, Burns, Scott, Wordsworth, Browning, Coleridge, Moore, Lytton, and others, the whole occupying twenty pages of the work. In the first example given we find the origin of the familiar appellation, the "Queen of Flowers," penned by Sappho 2000 years ago :—

> "Would Jove appoint some flower to reign
> In matchless beauty on the plain,
> The Rose (mankind will all agree),
> The Rose the queen of flowers should be."

There is much delightful reading in the various ballads, sonnets, and songs of and to the Rose, and many good sentiments charmingly expressed ; one, among others, by Clare, having historical significance, taking us back to days of turmoil, and bringing us to the present, when liberty and loyalty are happily united :—

> "The Rose is red, the Rose is white,
> The Rose it blooms in summer light ;
> But, ah! it clouds the heart's delight
> To muse upon its history.
> It tells full many a woeful tale,
> Of hearts made cold, of cheeks made pale,
> Of love's sad sigh—the widow's wail,
> In days of strife and chivalry,—
> Sweet Freedom, may the age prevail,
> That strife no more may be.
>
> "The Rose is red, the Rose is white,
> The Rose is pleasant to the sight ;
> Now both its hues in one unite,
> To crown the brows of loyalty!
> Strife took the white Rose for its crest,
> But Concord placed it in her vest,
> Where deep it blushed upon her breast,
> To wed the tree of Liberty ;
> And while it blooms as Freedom's guest,
> There let it ever be."

Another addition is of a very practical kind, a calender of operations in the Rose garden for the several months, commencing in October, as the beginning of the Rose grower's year. The instructions are concise and to the point, and it would be difficult to take out a sentence without impairing the usefulness of the timely hints given. Calenders too often betray a desire to spin out sentences for covering space and manufacturing pages, but this is not one of them. The article on the "Botany of the Rose," originally prepared by the late Mr. Thomas Moore, has been revised, and much of it re-written by Mr. J. G. Baker of Kew, who does not undertake to do anything that he does not do well ; and the full and excellent chapter on the entomology of the Rose has been revised by its author, Mr. Arthur W. Paul, who has evidently spared no pains in rendering it as instructive as it is ably written.

In the production of this edition of "The Rose Garden" the materials collected during a period of forty years are arranged in a systematic manner, nearly every item being indexed, and the reader can easily seek and find information on almost every point on which he requires it in connection with the Rose. The work may be fairly described as a complete one—a work of which, taking it all in all, substance, execution, and comprehensiveness, we know no equal on the subject. There is not a public library in the kingdom it would fail to enrich ; and it is not easy to conceive of any lover of the Rose with a guinea to spare who could be disappointed by its investment in the beautiful volume before us. And those who cannot indulge in the *édition de luxe* will find a wealth of information in the less highly embellished yet well-finished companion issue above referred to, and both are commended to the different classes of readers to which they appeal.



HARDY FRUIT GARDEN.

TRANSPLANTING TREES.—The wood on young trees especially has ripened badly, many still holding much of their foliage. In all such cases early transplanting is almost certain to result in a portion of the young wood shrivelling never to plump again properly. Those who were in a great hurry for their young trees will, in all probability, have cause to regret their haste. It is wise to order the trees early, but the nurserymen ought to be allowed to use their own judgment as to the advisability of lifting and despatching as soon as the order is received.

Those who may wish to transplant any trees already established on the place, and it is a good plan to regulate those against walls and in the open occasionally, ought always to wait till the greater portion of the leaves are fallen. At the present time all but Peach and Nectarine trees have shed their leaves, and the work, therefore, of transplanting Apricot, Cherry, Plum, and Pear trees ought to be pushed forward while the mild weather continues. The aim in all cases should be to secure a moderate sized ball of soil about the roots, and to preserve as many of the latter as possible. A trench must be opened at least 4 feet clear of the stem of a moderately large tree, and still farther off if extra large specimens are to be moved. Then, if the roots are well undermined with the aid of forks, and gradually traced to near the stems, only a few of them need be broken. The ball of soil and roots being slipped on to a stout board or legless hand-barrow may easily be lifted out of the hole, carried to its new site, and replanted. Always plant rather high to allow for the natural settlement of the soil, cleanly cut away all bruised roots, as well as the jagged ends of the sound ones, and distribute these evenly through the soil, keeping all as near the surface as possible consistent with safety. Transplanting fruit trees frequently greatly improves their productiveness, and if given plenty of fresh loamy soil or chopped turves the quality also will be improved.

Lifting Fruit Trees.—Lifting as distinguished from root-pruning usually consists of undermining and completely raising the tree and returning it to its original site again. It is more often necessary in the case of much-restricted and miniature trees, and being practised every two or three years checks luxuriant growth without spoiling the prospect of a full crop the following season. The first time the trees are lifted many of the roots will have spread to a considerable distance, and these have to be cut through at about 3 feet from the stem. This, in addition to checking injuriously deep root action, also induces the formation of abundance of root fibres, so that in after years quite a compact mass of fibres will be found when the lifting time comes round again. Any trees clear of walls, notably pyramid and bush Apple and Pear trees, ought when lifted to be half turned round, and in this manner each side in its turn gets the full benefit of the full sunshine, an important proceeding, the benefit of which ought to be apparent enough. A small portion of fresh loamy compost ought to be disposed about the roots each time the trees are lifted, this being the means of sustaining the fertility of the trees as well as insuring the perfecting of much finer fruit. Lifting is by no means a very formidable job, and in the case of cordon trained trees is absolutely necessary, or otherwise there is every likelihood of much growth and little or no fruit being produced by them. Much stunted trees ought to be lifted and replanted in rich compost.

Root-pruning.—This is a more gradual and less severe process than lifting, and acts most beneficially where given a fair trial. When a large tree is wholly lifted it experiences a check from which it does not recover for two or three years, a much stunted growth being the almost sure consequence. It should be remembered that root-pruning is advisable in most cases where the trees invariably form an excessive quantity of wood, and produce little or no fruit. The root-pruning being judiciously carried out, the exactly opposite state of affairs—viz., abundance of fruit and a moderate quantity of growth will, frosts and birds permitting, be induced. Rank growth and unfruitfulness is usually consequent upon a deep and widespread root-action, and this must be checked before abundance of root fibres will form near the surface. An improved root-action is soon followed by more fruitful growth, sturdier well-ripened wood being best calculated to bear abundance of fruit. There are two methods of accomplishing this desirable end, one being completed at once, the other in two or more seasons. Comparatively young trees, or any that have only just furnished much of the space allotted to them, will not, as a rule, have formed any very stout wide-spreading roots, and will also be furnished with a moderate quantity of root fibres or smaller roots. Such may have a trench opened round them at a good distance from the trees, and the roots carefully bared to within 2 feet of the stems. All being duly shortened and relaid in fresh turfy loam or ordinary garden soil, and in every instance brought as near to the surface as possible, nothing further will be needed beyond mulching the ground early in the summer. Much older trees treated similarly might end badly, and the safest course is to partially root-prune, and complete the operation next autumn or early in the winter. In this case the trees should be root-pruned on one side only at a time. Sometimes the trees derive nearly all their support from a few very strong wide-spreading or deep-running roots, these may be needing cutting through with a saw. In such instances the root-pruning must extend over three seasons, a year's interval being necessary for the proper recovery of the severely shortened roots. Or to be plain, the second half of the roots must not be cut before those first operated on have formed abundance of fresh root fibres. The undermining must be thorough, or the strongest deeply running roots will probably be missed, and it is owing to these that much sappy wood and inferior fruit are produced. This method of root-pruning and renovating the trees will not be complete unless abundance of fresh loamy soil, with the addition of fine bones be used. Soil long occupied by the roots of trees will not encourage the formation of abundance of root fibres, but a fairly rich compost will, and is also necessary for the well being of the trees.

FRUIT FORCING.

Vines.—*Making Vine Borders.*—Where young Vines have to be planted in spring advantage should be taken of suitable weather for securing compost and getting the border prepared for their reception. Drainage being the first essential, this part of the work must be well done. Place 3-inch tiles with proper fall and outlet to carry off the water passing the drainage, and if the bottom of the border be wet, or subsoil unfavourable, it ought to be concreted, than which nothing answers better than two parts gravel and one part cement formed into a mortar-like mass. The gravel should be fine as for garden paths, and be 4 to 6 inches thick. The drainage must be clean and not less than 9 inches thick, better a foot, the coarsest at bottom and finest at the top, which may be covered with the coarser parts of old mortar rubbish, using that remaining in a half-inch sieve after sifting the finer particles out. The finer portion will do for mixing with the compost, but be careful to remove from the mortar rubbish all pieces of wood or old laths. The drainage may be covered with a thin layer of turves grass side downwards. Thirty inches depth of border is ample, which may consist of good turfy loam—*i.e.*, the top 3 or 4 inches of a pasture taken off with its turf and chopped roughly. A rather strong calcareous loam is best, as the Grapes are found to attain larger size and have a better colour and finish than when light soil is employed. Light soil, however, may be improved in holding texture by an addition of clayey marl, a fourth to a sixth according to the nature of the loam, whilst a strong clayey loam may have similar proportions of old mortar rubbish or road scrapings incorporated with it. Surface loam rarely contains sufficient calcareous matter, and old mortar rubbish is too sleepy for these go-ahead days, so it need only be used to keep the soil open, to hold moisture, and a source of lime as the Vines require it, but chalk would perhaps be preferable. What is found to answer best is quicklime, as much as a tenth being incorporated with the fresh loam, thrown in a heap and thoroughly mixed before putting in the border, where it should remain about six weeks before planting the Vines. Charcoal may be used to the extent of a twentieth, and steamed crushed bones to the extent of a fortieth. The fresh lime causes the better and earlier assimilation of the fibry matter as food, and the Vines are not so liable to make a gross growth with a corresponding large pith; indeed the wood is more ligneous, and what is lost in grossness is counterbalanced in hardness of wood and plumpness of buds. It is advisable to keep the border well above the surrounding ground level, especially in low damp situations, and give the surface a good slope to the front, so that when covered rain and snow is thrown off. A 4-feet width is sufficient to start with, and should be inside, the roots being confined it it by closing the apertures in the front wall, as it is advisable to have the inside border well filled with roots before admitting them to the outside.

Young Pot Vines.—Those intended to be grown into fruiting canes may be cut down to a couple of eyes or close to the pots, dressed with styptic, and placed in a succession house, which will be started early in January. Single eyes may also be inserted in small pots or in pieces of turf, and kept cool for two or three weeks before they are placed in bottom heat.

Midseason Houses.—Proceed with pruning the Vines, as they break and show better when they have a good season of rest. They should be dressed, and the house thoroughly cleansed ready for a fresh start when the proper time arrives. The loose inert surface soil must be removed down to the roots, and a layer given, 2 or 3 inches thick, of fresh loam, to which has been added a sprinkling of bonemeal and charred refuse. Keep the houses cool and dry until the time arrives for closing. If they must be used for plants, keep them 40° to 45° by artificial means, and as dry as practicable.

Late Grapes.—Examine these at least twice a week for decayed berries, and keep the house as cool and dry as may be consistent with the safety and preservation of the fruit. When thoroughly ripe and the Vines are leafless, a mean temperature of 50° is suitable until the time arrives for bottling. Anything much below this is liable to cause mould and decay; and fire heat, especially at night, will undoubtedly cause the berries to shrivel immediately after the fall of the foliage. No further time should be lost in preparing the Grape-room ready for the stock of keeping Grapes, which must be cleareed off the Vines not later than the first week in January, and a week's steady firing is necessary to expel damp. The certainty with which Grapes keep bottled for four or five months in better condition and at less expense has given confidence in a system which affords relief to the Vines, insuring that perfect rest so essential to their after well-doing. Gros Colman requires the longest time of any on the Vines, as it takes colour after the foliage is ripe, and owing to the soft fleshy nature of the footstalks, which are likely to decay, it is best kept in the driest and warmest part of the Grape-room, by which means it parts with its earthy flavour and improves in quality. To do well, it requires to be started early—by the middle of February—not later, as it needs a long season of growth, and the fruit ought to be finished by the end of September.

Cherry House.—The trees having been duly attended to in pruning, dressing, &c., the house can now be closed. Let the treatment be such as will not excite growth prematurely, therefore only allow a slow progression. A temperature of 40° to 45° at night and 50° in the day will need to be maintained by artificial means. When the external conditions, however, are favourable a few degrees higher may safely be permitted, but anything calculated to bring the trees on too quickly must be carefully guarded against, as undue excitement at the commencement is likely to prove injurious to the crop. Ventilate at 50° just a little at the apex to insure a change of atmosphere, ventilating freely at 55°, allowing an advance of 65° or 70° with sun, and closing at 55°. Moderate moisture in the atmosphere will be attained by syringing occasionally, but in all cases allow the trees to become dry before night. It is highly important that the borders be thoroughly moist, as

when the trees are excited into growth fresh roots will speedily be formed, and to encourage them moisture is absolutely essential.

STRAWBERRIES IN POTS.—The weather has been mild, but it is not desirable to push the plants forward, as they are not very well developed in the crown through the prolonged cold summer, therefore proceed cautiously, and there is not greater need for it than in Strawberry forcing, in frosty dull weather, allowing the temperature inside to fall corresponding to that of the outside, seeking only progress when there is sunshine, or at least gleams of it, when heat may be turned on early in the day so as to rise and maintain a temperature of 50° to 55° through the day, and the walls and paths may be damped, but only when there is a prospect of sun, so that the moisture by its action and that of a little air will have dried up before night, and the temperature should fall to its minimum of 40° to 45°. Continue this under adverse circumstances until the new year, after which it is surprising how the plants progress with comparatively little aid. The system of starting Strawberries on beds of leaves and dung in a fermenting state is a bad practice, as it starts the roots into activity for no purpose, Nature itself being the best prompter in this respect, and unless the plants have already a sufficient number of roots they are unfit for forcing. It is a good plan to start an equal quantity of two sorts, so that one variety will come in after the other in successional order. Be careful to allow the plants sufficient water, examining the soil daily.

PLANT HOUSES.

Allamandas.—Plants that have rested for six weeks or two months may be started into growth. Potting can be done while the plants are in a dormant state or after they have commenced growing. The first is perhaps the most suitable time, for it is almost impossible to repot the plants after they have started growing without injury to some of the young tender shoots. If the plants are grown in pots turn them out and reduce the old ball by half. They should then be soaked in tepid water and allowed to drain thoroughly before repotting. Well drain the pots and press the soil in firmly. If the pots can be plunged no water will be needed before the plants have started into growth, but light syringings with tepid water twice daily will be beneficial. Use for a compost good fibry loam, a little sand, and one-seventh of decayed manure. Allamandas planted out or grown in restricted borders should have a good portion of the surface soil removed and rich material supplied. In this case one-third or even one-half of decayed manure may be used.

Clerodendrons.—The earliest plants may be started under the same conditions as advised for Allamandas. Soak the ball in tepid water, which will be all the water needed at the roots until growth has commenced, when repotting should be done. In this matter some care is needed, for these plants resent their roots being unduly disturbed. Only reduce the ball carefully by one-third. Use the compost advised for Stephanotis with the addition of one-third of leaf mould. These plants will do well for years in the same pot provided a top-dressing of manure is given, with liberal supplies of liquid manure during the growing season.

Bougainvilleas.—If all the weak shoots have not been removed cut them out at once, and only retain the strongest and best ripened of last year's wood for laying in. Cut back shoots that are not wanted for this purpose to one or two eyes at the most. Start the plants into growth the same as Clerodendrons, repotting and top-dressing them in the same way, but employ the compost advised for Allamandas.

Epiphyllums.—If these are wanted in flower introduce them into heat; a temperature of 55° will do very well. These plants are handsome when in flower if they are elevated above a groundwork of Ferns. In no position do they look better than in association with Adiantum cuncatum. Be careful not to give too much water, and at the same time do not keep them so dry that they shrivel. This is fatal to the stock upon which they are worked.

Callas.—If these are not coming forward rapidly enough place them in gentle heat, and they will quickly push up their spathes. All intended for late spring flowering should be kept as cool as possible, or they will draw up tall and weakly. Be careful to have the plants free of aphides, for if they exist on the foliage of the plant they are certain to establish themselves on the spathe directly it appears. Aphides are easily removed from these plants by fumigating with tobacco, or by sponging the leaves with diluted tobacco juice.

THE BEE-KEEPER.

NOTES.

FOR some days previous to, and until the 6th inst., the weather has been changeable, with excessive rains, but always accompanied with a high temperature, a sure precursor of wind. For nearly a week in succession the mean temperature has been 50° Fahr., the highest being on the 4th, when the night temperature was 50° and the day 56°, being a mean of 53°. The bees during these days were active, and searching the Arabis for pollen, as well as gathering all unused pea meal they could. The great storms of wind and rain have destroyed the bloom of all flowers more than any frost that has been experienced this season. In our locality hives with wide entrances and one-piece floor and alighting board, where facing the storm, are deluged with water.

SUPERING.

"When shall I put on my supers? and what is the reason my bees will not take to their supers, but swarm or lie out instead?" These are queries that are asked over and over again. I will endeavour to make superiug intelligible.

In this country the honey season is so short and uncertain, that we often cannot say long beforehand what must be done. The great object of the bee-keeper is to make sure his hives are in "full strength." I must emphasise these two last words, because it is on them alone that success depends, and full strength means that the hive must be full size. Hives of ten standard frames only have been the cause of much disappointment and needless expense to the cottager for whose benefit they were said to be introduced; but why a smaller sized hive for cottagers? Are not their bees as good workers and gatherers of honey as those of the rich man, who has had a hive at least a half larger? and yet we are never out of hearing of the cry what certain advisers have done for the cottagers of Great Britain.

Bees will never work in supers satisfactorily that have too small a brood nest, such as in the ten-framed hive. Often before the time comes for putting on supers the bees of these hives have prepared for swarming, and will either swarm or crowd out rather than enter the supers. Owing to the limited capacity of the hive many eggs are destroyed, and the swarm from it being in proportion to the size of the hive, rarely makes headway enough to be able to fill supers in our fickle and transitory honey seasons. It generally happens that the honey season follows immediately after a term of changeable weather with a low temperature. Before, and during this time, the bee-keeper should use every precaution that there be no waste of eggs or larvæ, nor anything likely to give the hive a check; breeding must be kept up without intermission. The well-managed and full-sized hive will, during this time, increase greatly n bees, so much so, that immediately the weather changes the hive becomes intolerably hot. This, supering will at once relieve, the bees taking to the supers in the nick of time. They work with a will until some other change comes, such as every cell of the hive being occupied, then the bees start royal cells, and swarming will take place, no matter what room, or how it is provided. The swarm from such a hive will generally take to supers if the weather is fine after a few days, provided it has been put into two body boxes instead of three, or much better where two swarms have been joined.

A very old custom to compel bees to take to supers, consisted in adding a "winter raise"—*i.e.*, a shallow box, which was used underneath the hive during winter. This box was also used when the bees were ahead of the season by putting it right beneath the hive, where the bees would descend and build snow-white comb. After a few days and before brood was in it, it was taken out and supers put on, when the bees immediately took to them, and the new built combs were used as guides for supers. How these combs were fixed I recorded in the pages of this Journal nearly thirty ago. The top bar was split and the side walls of the comb were pared away until the midrib only was left for about a quarter of an inch down, and then placed between the split bar. These were, perhaps, the first split bars used. Another plan was to smear the under side of the bar with wax, which was slightly heated and the comb straightened by being run along a heated smoothing iron, then applied to the waxed bar, when it adhered sufficiently till the bees made all firm. These were called "toaks" in Stewarton, where they were probably first used. Comb foundation has supplemented these, but has not improved the quality of the super when nothing but the delicate pure natural comb was used.

The foregoing brief hints may be regarded as the essence of successful supering, which consists in having hives in readiness in and at the right time, and not attempting supering until there are bees to fill the supers and attend to the brood. In "Gleanings" for November 15th Mr. G. M. Doolittle has a sensible article on supering, in which he objects to the tiering up of supers—that is, if I understand him aright. He ably points out its defects, and shows the way bees work naturally, abhorring a vacuum—just as I have repeatedly pointed out to the readers of this Journal. His mode of supering is in accordance with the natural working of the bees, giving them at first space right in the centre and over the cluster and extending on both sides gradually as the bees can get on with comb-building. But, however plausible his argument is in this last respect, and however "natural" the process is, it would never be successful in this country. To attempt such here the honey season would come and go before anything like a harvest was secured. In countries where fine weather is of long duration, and where hives with fewer bees than obtain in this country can gather more honey by reason of length of time, the plan may do very well. But in this country a hive is not ready, nor in a fit state for supering, until the bees are numerous enough to take possession of and fill rapidly supers equal at least to a third of the size of the hive. Moreover, it is a mistake to attempt supering with the centre spaces over the brood nest open, as I have shown frequently. Mr. Doolittle argues the thing reasonably and fairly and in accordance with the nature of bees, but his country is different from ours.—A Lanarkshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

James Carter & Co., 237 and 238, High Holborn, London.—*General Seed Catalogue, highly illustrated.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*Subscriber*).—It is doubtful if any work will suit you better than the "Cottage Gardeners' Dictionary," price 8s. post free from this office. It is very comprehensive, and as you will perceive much less costly than the work you name. (*Shelley*).—We do not know of a good book on the subject you name. (*H. M.*).—The sixth edition of "Mushrooms for the Million" is in the press.

Bellissime d'Hiver Pear (*G. L. C.*)—This is a very good culinary Pear, some persons, however objecting to it because it is not quite firm enough for them, preferring Catillac, even if it is sometimes gritty at the core. The first-named makes a very good pyramid, and on that account would be suitable for your purpose.

Pine Apple (*T. J.*).—The crown is formed of the leaves, and they are of the same use to them as are the leaves of all the plants in the same tribe. If the crown is proliferous, reduce it to one as soon as apparent. Bad cultivation causes an excess of crown, such as too little heat and deficient light. Small crowns are always preferred.

Analysing Soil (*J. Mooreby*).—We believe Dr. Voelcker undertakes scientific work of this kind, and you may write to him on the subject, his address being Salisbury Square, Fleet Street, London, E.C. He will advise you on the quantity to send and the depth of procuring it for your purpose, if you make this known to him.

Chrysanthemum Sport (*T. S.*).—Unquestionably the large flower sent is distinct from the type, this being a well coloured bloom of Empress Eugenie. The "sport" is reflexed, and better than many we have seen in the stands of that section this season. Fix it if you can with the object of ascertaining its true character. There have been many abnormal blooms this year, which we suspect are peculiar to the season, and may not be seen again.

Fruit Trees on Clay Subsoil (*Burton*).—Make stations, or mounds, upon the surface of your garden, as frequently recommended. Plant the trees upon them, cutting away any descending roots, and training out the lateral roots regularly all round, and near the surface. Keep that surface mulched and undug. By this means the roots will be induced to remain near the surface. If you destroy the surface-roots by digging, others will be formed deeper in the soil, and these getting into the clay will induce canker.

Pruning Deutzias (*D. O.*).—They should be pruned like Gooseberries and Black Currants—that is, getting rid of as much old wood as you can, and leaving the young to flower and make flowering wood; in two words, remove the old and spare the young wood every time you prune them, but then you are not on that account to cut away more old wood than will keep the bushes moderately thin. A young shoot here and there that is longer than the rest, or out of shape, is to be cut in keeping the bush uniform in shape.

Plan of Garden (*P. E.*).—There is not one of the present beds in the right place, for this reason—there is not a place for any of them. We would not do away with the walk across the end from the entrance by any means, nor the border on the right going to the kitchen garden, as that border no doubt was intended for evergreens; but if the flower garden were to be levelled and laid out in the geometric way, that border ought to form a part, and then the grass to reach the side of the walk to the kitchen garden.

Wintering American Aloe (*A. S.*).—The plant will do very well in the hall if the stove does not raise the temperature above 50°. If it raised the heat much above that it ought to stand near a window, and if not suitable to give it light you will keep it better in the stable at the farthest corner from the horse, allowing it to be dry, covering it with a cloth and hay in bad cold weather, and now and then, when the weather is fine and mild, setting it out of doors for a few hours. It will keep very well in any dry cool place provided frost is excluded.

Rockery Water Basin (*G. James*).—The best and cheapest way of having a water-tight basin in a rockery is to build it with bricks in cement, and to plaster the inside of it with best Roman cement. Then to build the rockwork round it, to form the lowest side into a valley, and to get the waste water to run there, or to stands in pools or lakes; and to plant marsh plants and water reeds to shelter and shade smaller kinds along the banks. Nothing is more easy than to remove the most of our Ferns in mild weather, from September to the middle or end of March. Take good balls with them and observe how they grow. But naturally some are on dry banks, some in deep sandy loam, some in very dry exposed places, and some the contrary No guide is better than Nature in Fern culture.

Coriander (*Youngster*).—The leaves of this are used both in salad and in soups for their high and peculiar aromatic flavour. The seeds are used medicinally, and are considered soothing and stomachic. They are also sold by confectioners, encrusted with sugar. If required early the seed is to be sown thinly on a hotbed in February or March; and when 3 inches high the plants are ready for use. As they will soon run to seed another sowing must be made in April for a succession. This may be done in an open, warm situation, in drills 6 inches apart, an inch deep, then covered over with light earth with a rake. When the leaves are 3 or 4 inches high, they may be gathered for use by cutting them off close to the ground. To have a supply all the summer a little should be sown every month, as it soon runs to seed. For winter use it may be sown in August and September on a warm border; and when cold weather sets in the plants must be hooped over and protected.

Early Tomatoes (*S. S.*).—Certainly you may commence earlier than March—sowing the seed at once or in January, if you can keep the plants sturdy, for this purpose cultural skill requiring to be added to suitable structures. We do, as you suggest, endeavour to exercise the virtue of patience in dealing with the questions of correspondents when we can aid them in their difficulties. This is, in one respect, particularly necessary, as they so often overlook or forget the precise information that is required, and where it is given in fuller detail than is practicable in the form of a reply. A position close to the glass, and a temperature of about 65°, falling to 60°, is necessary for raising Tomato plants very early in the season. Roses are best not forced the first season after planting, and especially if soil was shaken from their roots in the process or if they were dug from the open ground. Bonemeal is excellent for incorporating with the soil for Tomatoes, a little potash further improving it.

Pruning Ipomæa Leari (*S. Gordon*).—The Ipomæa Learii is one of the best conservatory climbers; but it will be apt to suffer if the average temperature at night in winter be long below 45°, and especially if the main stem be near the glass of the roof, where it would be most quickly cooled by radiation on a frosty night. If the plant consist of one main strong stem, with flowering shoots coming from that main stem all the way, then each of these shoots may be pruned back now to

within three or four joints or buds from the main stem. In spring, after winter is past, you may prune back to one or two buds, as it is from the shoots produced in summer from these buds that the flowering takes place. If the plant be not furnished with a stout main stem, it would be advisable to merely partly prune now and again in spring. Prune in such a manner as to leave a sufficient amount of buds to produce shoots regularly all over the plant; say, to procure a stout shoot, every 15 or 18 inches; and these will look best if allowed to grow downwards as danglers from the main stem and rafters. If your house be kept cool in winter it would be advisable to suspend the main stem 2 or 3 feet from the glass.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Newark*).—The Apple you have sent under the name of Cox's Orange Pippin resembles Fearns Pippin, but the fruit has apparently been gathered too soon, hence we cannot be certain of its identity. The other we do not recognise, and it is probably local.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. Leech*).—A narrow petalled form of Oncidium incurvum. (*W. E. C.*). —1, Eranthemum pulchellum; 2, Correa speciosa; 3, Aster horizontalis; 4, Tetratheca verticillata; 5, Pentas carnea; 6, Crassula lactea.

COVENT GARDEN MARKET.—DECEMBER 12TH.

No alteration. All classes of goods well supplied.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
,, Nova Scotia and Canada, per barrel	10	0		19	0	Oranges, per 100	4	0		9	0
Cherries, ½ sieve	0	0		0	0	Peaches, dozen	0	0		0	0
Cobs, 100 lbs.	100	0		0	0	Pears, dozen	1	0		2	6
Grapes, per lb.	0	9		3	0	Plums, ½-sieve	0	0		0	0
						St. Michael Pines, each	3	0		8	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	10		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	0	0		0	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Brussels Sprouts, ½ sieve	1	6		2	6	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	1	0		2	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsify, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Ahutilons, 12 bunches	3	0	to	6	0	Marguerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	4	0		8	0	Mignonette, 12 bunches	2	0		4	0
Asters, dozen bunches	0	0		9	0	Narcissus (Paper White), 12 sprays	1	0		1	6
Azalea, 12 sprays	0	9		1	0	,, (French) bunch	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms	3	0		4	0	,, scarlet, 12 trusses	0	4		0	6
Carnations, 12 blooms	1	0		2	0	Poinsettia, dozen blooms	4	0		6	0
Chrysanthemums, 12 bl.	1	0		3	0	Primroses, doz. bunches	1	0		2	0
,, 12 bchs.	4	0		12	0	Roses, Red, 12 blooms	1	0		2	0
Cyclamen, dozen blooms	0	4		0	9	,, (indoor), dozen	1	0		1	6
Dahlias, 12 bunches	0	0		0	0	,, Tea, dozen	1	0		3	0
Eucharis, dozen	3	0		6	0	,, yellow	3	0		6	0
Gardenias, 12 blooms	4	0		9	0	Stephanotis, 12 sprays	4	0		6	0
Hyacinths (Roman), doz. sprays	1	0		1	6	Tropæolum, 12 bunches	1	0		2	0
Lapageria, 12 blooms	1	0		2	6	Tuberoses, 12 blooms	0	9		1	0
Lilac, White (French), per bunch	6	0		7	0	Violets, 12 bunches	1	0		1	6
Lilium longiflorum, 12 blooms	4	0		6	0	,, Parme (French), per bunch	3	6		5	0
Lily of the Valley, 12 sprays	1	6		4	0	,, (French) bunch	1	6		2	0
						Wallflowers, doz. bunches	4	0		6	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Evergreens, in var., dozen	6	0	to	24	0
Arum Lilies, per dozen	9	0		12	0	Ferns, in variety, dozen	4	0		18	0
Arbor vitæ (golden) dozen	12	0		24	0	Ficus elastica, each	1	6		7	0
Asters, 12 pots	0	0		0	0	Foliage plants, var., each	2	0		10	0
Begonias, various, per doz.	4	0		9	0	Fuchsia, dozen pots	3	0		6	0
Chrysanthemum, doz.	4	0		9	0	Hyacinths (Roman), doz.	9	0		12	0
,, large, doz.	15	0		24	0	Lilium, various, doz. pots	0	0		0	0
Coleus, dozen	2	0		4	0	Marguerite Daisy, dozen	6	0		12	0
Cyclamen, dozen pots	9	0		18	0	Mignonette, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0	Myrtles, dozen	6	0		12	0
Dracæna viridis, doz.	12	0		24	0	Palms, in var., each	2	6		21	0
Erica hyemalis, doz.	12	0		24	0	Pelargoniums, scarlet, 12	6	0		9	0
,, gracilis, doz.	9	0		12	0	Poinsettia, per dozen	10	0		15	0
,, various, doz.	8	0		18	0	Primula, per doz.	4	0		6	0
Euonymus, var., dozen	6	0		18	0	Solanums, doz.	9	0		15	0



SHEEP MANAGEMENT.

A PURPOSE and plan in sheep management is as important as it is in anything else. Even in breeding we have to calculate ways and means, and to look forward to a due provision of food for lambs as well as ewes. It is a sound rule of practice never to purchase food that can be produced upon the farm, unless a positive saving upon purchased food is possible. That this has been so with Oats during the last year or two appears clear enough, and yet the matter is well worth looking into. It would seem that while imported Oats can be had in any quantity at the wholesale rate of 1s. 6d. to 2s. per bushel, it surely answers best to purchase what we require for the sheep, and turn the land to better account in the cultivation of Barley and Wheat. But does it? Under ordinary culture the yield of Oats per acre does not exceed 40 bushels, yet we know full well that under high culture three times that quantity can be grown, and the quality of superior home-grown Oats is greatly above that of so-called cheap imported Oats. Of course we admit that 120 bushels per acre is an extraordinary crop, but there is no doubt that such crops of Black Tartarian Oats have been grown, simply by superior cultivation. The reason for the wide difference in the yield of Oats is a question of fertility of soil. The absurd old plan of applying a moderate dressing of manure for Wheat, and subsequently taking two or three other crops without any manure, is still in force upon many a farm, and crops inferior both in quantity and quality are the result; in common fairness such results cannot be taken for comparison. Weight is a good test of quality in Oats, 42 lbs. per imperial bushel being the recognised weight of really useful corn. This is the standard buying weight of the East Anglian farmer, who does not care to purchase Oats under 12 stone of 14 lbs. per coomb of 4 bushels. Fine home-grown Oats will often closely approach 50 lbs. per imperial bushel, and they are worth from a third to a half more than most imported Oats. We have dwelt somewhat upon the question of home-grown *versus* foreign Oats here, because this corn is such an important article of diet for sheep.

Under ordinary conditions Oats have the preference over other corn for sheep feeding, simply because Wheat and Barley can be turned to better—that is to say, more profitable account. At the present time inferior Barley that is not worth more than from 20s. to 24s. per quarter, is being crushed or ground and mixed with other food for fattening sheep. In his experiments in sheep feeding at Woburn, Dr. Voelcker tried five pens, each containing eight sheep, the corn used being crushed Oats, grittled Barley, Oats and Barley in equal quantities, Wheat (whole), Oats and Wheat in equal quantities, respectively in the different pens. About 20 lbs. of sliced Swedes and a quarter of hay chaff was given with about three-quarter lb. of corn per head daily, and Dr. Voelcker says "The results show, in the case of four of the five foods, comparatively small differences in the increase of live weight. The actually highest result was got with Wheat, but both Oats and Oats with Barley nearly approached it, whilst Barley given alone showed a less favourable result, and Wheat with Oats the lowest of all. It would appear that between foods so nearly approaching one another in chemical composition as these, the differences in live weight obtained are likely to be but small, but that the mixture of Oats and Wheat is not so suitable, whilst as to the rest, Barley given alone is hardly as good a food as the others. As regards Wheat, the experiment proves, I think, now, beyond doubt, that this may be both safely and profitably used for feeding sheep off

on roots. For the third year in succession Wheat has been tried, and each time has shown good results."

The practical outcome of these experiments is, that while giving the preference to Oats, Wheat or Barley may be used with safety always, and with advantage when prices fall so low for either sort of corn as to prove unremunerative. They go also to support our oft repeated advice always to use home-grown corn in preference to purchased linseed or other cake, which may be pure, but is probably adulterated. We used regularly to give sheep hay and hay chaff, but finding them to eat with equal relish chaffed Oat, Barley, or Pea straw, we have for some time refrained from using hay for sheep, and no farmer will go far wrong who uses about a pound of crushed corn with a moderate quantity of roots, and as much chaff or whole straw as the sheep can consume.

(To be continued.)

WORK ON THE HOME FARM.

Never had we such heavy arrears of ploughing as at the present time, and the delivery of corn sold still retards that work. We should, of course, much prefer to push on ploughing and leave the corn till the new year, when we shall probably have frost and snow to put a stop to work on land. Unfortunately we cannot do so, but what time can be given to ploughing is turned to best account. Of corn threshed the yield is on the whole satisfactory, Barley being about 50 bushels an acre and Wheat about 40. Some of the heavy land Wheat does not approach this average, and the grain is both small and light, owing to the very dull, wet, cold weather when the Wheat was in flower and subsequently. This inferior Wheat is not worth more than 30s. per quarter, yet we are glad to say our white Wheat is worth from 6s. to 8s. more per quarter. But it is the Barley trade about which there is such a sad outcry now, for most of it was so much discoloured by rain before harvest that really good malting samples are few and far between. Size and weight of grain tell more than usual in the sale of Barley. One of our tenant farmers has only realised 22s. 6d. per quarter. We have had to sell at a variety of prices ranging from 32s. downwards to 24s. per quarter, and are fortunate in having a heavy crop generally. Truly the farmers' work is handicapped by weather; we may arrange our plans with the greatest care, and leave nothing undone in our power to ensure success, but adverse weather, while it may not bring actual defeat, may prevent us from obtaining a full measure of success; and there can be no doubt that this is very generally the case this year. We are using a large quantity of discoloured Barley for pigs now, and they certainly thrive upon it; we thus turn the inferior corn to best account, and provide a certain quantity of manure for root crops next season. So far the whole of the pigs are healthy, and the sales of the more forward have been very satisfactory.

SEEDSMEN AT THE SMITHFIELD SHOW.

The Cattle Carnival at the Agricultural Hall is an event of far-reaching importance in the world of agriculture, and the farming element finds its way in strong force to "Merrie Islington" during the course of the great Show. Long prize lists in the daily papers, and descriptive notes, have exhausted all that there is of interest in the live stock exhibits; but a feature of interest both to farmers and gardeners —namely, the stands of the great seed firms—have not received the notice that they undoubtedly deserve. An important factor in profitable farming is the selection of the finest and most productive varieties both in corn and roots, and a distinct service to agriculture has been rendered by several firms of repute in devoting persistent attention and the best skill that experience can provide to the production of improved varieties in all staple farm crops. If improved varieties will enable five quarters of corn to be harvested where but four were secured before, a step in advance has been made, and a corresponding improvement in seed samples will lead to increased prices for an increased bulk of produce. Farmers would do well to give this matter their best attention. The able farmer and writer who endeavours week by week in the columns of the *Journal of Horticulture* to show farmers that only by a cautious yet courageous deviation from the "beaten track" can the fallen fortunes of British Agriculture be retrieved, has not hesitated to pay what many would consider "long" prices in order to convince himself that he had the best (hence most profitable) varieties that could possibly be procured. Had he not proceeded on these lines he would probably not have been able to point, as he has done in the present writer's presence, to a field, and say, "That gave me 7 quarters this year; three years ago, my first season, it yielded 3."

From the farmer's point of view the past season has not been so unfavourable as many that preceded it. Corn crops are generally good, though the harvesting proved a troublesome matter in some instances. Root crops have been heavy, and both in bulk of produce and quality of individual examples instances have been cited which equal what in sporting parlance would be termed a "best on record." For example, the enormous specimen of their new Elephant Swede, which graced the centre of Messrs. Carter & Co.'s fine stand, is claimed as the heaviest Swede produced. The weight recorded on the exhibitors' card was, without top, 30 lbs., and the girth 34 inches, or a diameter of nearly 1 foot. It was certainly a splendid root and the largest we have seen. The variety was also well represented by other examples, and is claimed as "The Swede of the future." Messrs. Carter's other useful Swedes, Green Top Hybrid and Prizewinner, and their fine Mangolds Golden Tankard (good examples grown on the estate of H.R.H. the Prince of Wales) Golden Intermediate, Warden Prize and Mammoth Long Red were exhibited in quantity. A portion of the stand was devoted to pasture Grasses in growth, another to Potatoes, while a series of arched recesses was devoted to samples of garden and farm seeds clearly labelled. Altogether it was a stand full of practical interest.

Dicksons, Limited, of Chester, and Harrison & Son of Leicester were represented, the former by grasses, fruit, fruit trees, &c., the latter by a good display of roots and garden seeds. Messrs. Oakshott & Millard of Reading had a very creditable display of roots "grown by their customers under ordinary field cultivation." These included examples of the Defiance Mangold grown on the estate of the Earl of Warwick, and stated to have produced 60 tons per acre; the Premier Purple-top Swede, Mammoth Long Red Mangold, and various Turnips. Seed corns and Potatoes were also shown, amongst the latter the round variety Satisfaction (by the way, are there not two "Satisfactions" in the field?), which last year, the exhibitors state, "produced upwards of 13 tons per acre," presumably under "ordinary field cultivation." "Satisfaction" in this case is well named.

A large, varied, complete, and highly interesting stand was that arranged by Messrs. Sutton & Sons, whose name is a household word both in the farm and garden. The front was furnished with glass cases, containing specimens of useful grasses and useless, or worse than useless, weeds, each fully named and described. The inclusion of the latter is a wise proceeding, for the bad should be known as well as the good. Natural grasses in substantial bundles—like miniature sheaves—and samples of grass seeds were a great feature. Amongst the roots large piles of Sutton's Stubble and Champion Swedes, Golden Tankard, Berkshire Prize, Mammoth, Intermediate, Oxheart, and other Mangolds were conspicuous. Green Globe, Mammoth, Greystone, and other useful field Turnips were also noteworthy. Baskets of Potatoes, comprising the majority of Messrs. Sutton's excellent introductions, and their New Intermediate Carrot, which has won innumerable prizes and is becoming popular in the markets, were other features of this interesting and instructive stand.

Roots were the main feature of Messrs. Webb's stand, and the display was typical of the advance that is being made by the Worcestershire firm. The Champion Yellow Globe Mangold, of which a weight of 58 tons, 18 cwt., 2 qrs., and 5 lbs., has been recorded per acre; Imperial Swede, of which a weight per acre of 37 tons, 2 qrs., and 24 lbs. has been recorded: Invincible Turnip, Yellow-fleshed Tankard Mangold, and new Giant King Swede were shown in large piles. Well worthy of attention, too, were the seed corns, Golden Grain Barley, Challenge Wheat, Kinver Giant Wheat, and Black Tartarian Oats—worthiest of all the firm's fine Barley Kinver "Chevalier"—*sans peur et sans reproche*. Stourbridge Glory, Wordsley Pride, and other good Potatoes were noteworthy.

We believe visitors are not allowed to take their canine friends into the Show—a fortunate thing for Spratts Limited, or the array of dog comestibles set forth on their stand would lead to its speedy demolition by a tempted legion of hungry animals.

OUR LETTER BOX.

Rape Cake v. Wireworm (*F. G.*).—Do not place reliance on the statement that wireworms will kill themselves by eating rape cake to repletion. A gentleman anxious to satisfy himself on the point collected some wireworms, and put them in a barrel with a generous allowance of cake. They appeared to be exactly suited by the incarceration, and increased rapidly in strength and numbers.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

Date. 1888. December.		9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	2	30.059	48.1	46.6	S.W.	43.7	53.1	37.5	69.9	34.1	0.020
Monday.....	3	30.020	50.2	47.9	S.W.	44.9	53.4	47.9	62.3	42.1	0.010
Tuesday .. .	4	30.052	53.3	52.2	S.W.	46.1	56.3	50.9	65.7	48.5	—
Wednesday..	5	30.182	53.6	52.4	S.	47.0	58.9	49.9	68.9	42.8	—
Thursday	6	30.248	52.3	5.3	S.	47.9	56.2	51.4	61.1	45.5	—
Friday	7	30.045	42.1	40.9	S.E.	47.1	50.9	38.8	65.9	28.9	—
Saturday	8	30.104	41.8	41.7	S.E.	44.8	49.0	34.9	52.1	27.9	0.142
		30.101	48.8	47.3		45.9	54.0	44.3	63.7	38.5	0.172

REMARKS.

2nd.—Generally fine with some sunshine, but one or two slight showers.

3rd.—Fine with some sunshine; strong wind.

4th.—Dull and damp early, fine bright day, damp evening.

5th.—Fine, but generally cloudy, very mild.

6th.—Fair day with some sunshine; high fog at times in afternoon.

7th.—Fine and bright, with seasonable temperature.

8th.—Foggy till 11 A.M., then overcast, and steady rain from 3 P.M. to 9 P.M.

An exceptionally mild and generally fine week. Mean temperature about 7° above the average.—G. J. SYMONS.

CHRISTMAS POSSIBILITIES.

ONCE more the greatest of all festivals is approaching, and preparations are already in progress for celebrating it in a befitting manner. Christmastide is essentially a period of joyousness. That it is too often a time of extravagant roystering we all know; but the abuse of what is good is unfortunately prevalent in many things, and all we have to say on that subject is this—Let mirth be wholesome and seemly throughout the festive week, so that there may be no after regrets, but, on the contrary, pleasant memories. That the overwhelming majority of our readers need no hints of guidance from us we well know; but we also know, as all are aware, the young and the sanguine are liable to be tempted beyond the lines of prudence, and to jeopardise their good name by a false step thoughtlessly taken. This has happened in the past with serious results, and we would not that any young gardener should fail in his duty when his associates are, for the time, free from responsibility, nor shall he if any words of ours can have a restraining influence.

Relaxation from toil and social pleasures are incidents of the season, and these in turn are tests of character. When personal inclinations come in conflict with stern duties, the weak and careless fall; the strong display their strength in rising superior to the allurements of the moment, and become trusted helpers, winning for themselves claims to advancement and more responsible positions. Christmas time, hence, is often a testing time, and our wish is that every young reader of these notes will pass through it manfully and honourably, so that his services may be the more prized accordingly.

Christmas time, while it brings pleasure to many, also brings labour to some—to most who are engaged in gardens. More than ordinary wants have to be met, and extra efforts made to meet them. Well it is for those, and we are glad to believe they are in the great majority, whose cheerfulness and pleasure increase with the activity they display in contributing to the happiness of others. The possession of this admirable spirit of willingness, though, does not wholly depend on those who labour, but is encouraged, or the reverse, by those who enjoy the fruits of such labours. And here comes in the enormous power of considerate kindness on the part of those who are served. It is as easy to request a service pleasantly as to order it severely, and there is no doubt as to which method brings the readier response. It is not so much masters who need a reminder of this as some servants with servants under them. The habit of "driving" is not quite extinct, and it will not be worse for the contentment of individuals, or for their interests, if the year nearing its close brings that habit a year nearer its termination. The man who is engaged to serve, and will not do so except under compulsion, is entirely out of place in a garden, and should be advised to seek some other occupation where strict lines of discipline are laid down in ordinary routine, and if he cannot conform to them he must pay the penalty he thereby incurs. Willingness is a valuable trait in men who are, or aspire to be, gardeners; and those of them who have the happiest lives are those who have the aptitude of anticipating wishes, and the more successful they are in this, the less, of necessity, are causes for complaint. It is not possible to cut the ground from under the feet of habitual grumblers, but even fault-finding may be made somewhat of a task, and that brings a little consolation.

Gardeners old and young may be closely pressed during the present week, and each should strive to assist the other. Without the produce of gardens, churches, halls, and tables could not be adequately furnished for the festival. The best that is possible is demanded on the occasion of family reunions and the assembling of friends, while the contents of many a garden will be displayed in churches; and it is only natural when the decoration of sacred edifices is practised in accordance with ancient custom and modern taste, that those who take active interest in the work should desire that only what is worthy and good of its kind should be presented there. It is no doubt a great tax on many gardeners to meet the requirements for the purpose in question, and at least in some instances they could be limited, not only without prejudice but with advantage, for exuberance in decoration suggests ideas of extravagance, not to say waste, that are obviously inappropriate under the circumstances.

How greatly the resources of gardens, developed by the skill of cultivators, contribute to home enjoyments will be manifest, not in great mansions only, but in residences of lesser note during the present week. Efforts are made to keep the best fruits for Christmas, the finest of Apples and Pears that can be had in season, the noblest bunches of Grapes, and whatever else may be provided for the occasion. No doubt disappointments are incurred in this matter which are not more keenly felt by the owners of fruit than by those whose duty it is to preserve special samples for special times and purposes, but fail almost at the last moment. Gardeners may arrest or retard the shrivelling or decomposition of fruit, and advance the ripening of some good kinds, but there is a limit to their power, and strive how they may they cannot always succeed in the object they may have in view. Some seasons are much more favourable to the keeping of fruit than others, and this is certainly not one of the best of them, but rather one of the worst.

Plants and flowers, too, are more than ever in demand in making rooms bright and cheerful on festive occasions, and where adequate means are afforded there is no lack of men capable of maintaining a supply at all times, with an extra abundance periodically by special preparations; but flowers cannot be had in the absence of the conditions necessary for their production and preservation. This may appear a mere truism. It may be that, but there is, perhaps, more in the observation than appears on the surface, or than all who are interested comprehend at a glance. For instance, gardeners with a limited number of glass structures in their charge may have had many more flowers last Christmas than they have this, yet there has been no reduction in means. Though there may be the same area of glass, the same number of plants grown as before, with no difference in their treatment, there is a marked difference in the result. Many persons cannot understand why that should be so, nor is it to be wondered at. The cultural conveniences may be the same, but the conditions—the natural conditions—are not the same, and therein rests the sequel of success in one year on a given date, and comparative failure in the year succeeding. A supply of flowers at Christmas depends as much on retarding and preserving as on forcing and advancing; indeed, in many, and probably the great majority of cases, the former process is by far the more important, and in not a few the only one that is practicable.

The present autumn has been no more favourable for the keeping of flowers than of fruit. Both have "gone off" prematurely through the same causes, and these are mainly two—the succulent nature of the growth in consequence of a wet dull season, too much rain and not sufficient sun; and long mild periods during the autumn, followed by sudden and extreme falls of temperature, causing the moisture in the air to be condensed on, and by the suddenly cooled petals, decay following. These are the conditions that have operated in the ruin of thousands of Chrysanthemum blooms weeks before their time, and it is, and must be, the same

with other flowers grown under the same circumstances. The natural result is this, and being natural it is inevitable, where the Christmas supply of flowers depended on retardation and preservation there must be scarcity this year in most, if not all, greenhouses. Where suitable houses for advancing other flowers exist gardeners who were wideawake would see the blank in prospect and take prompt action for diminishing the inconvenience.

Vegetables of all the useful and seasonable kinds are plentiful this year where space was adequate for their production, and proper methods, which have been indicated, pursued in their cultivation.

With these remarks, penned with the object of minimising discomforts that may be felt through possible, and in many instances unpreventable shortcomings, we wish to all our readers of every rank and degree most cordially and sincerely

A Merry Christmas.

HISTORICAL NOTES ON ORCHARDS.

It is a trite old saying that "history repeats itself," and the observation is not destitute of truth. In respect to the culture of fruit, we find history repeating itself with a considerable amount of fidelity. Relative to the planting of orchards in past times we find this sentence in the notes published last week, and which were written before many present-day readers were born. Remarking on the decrepit orchards it is stated, "no regular systematic planting and successive cultivation of fruit trees seems ever to have been kept up in this country; whatever was done was brought about by urgency, and carried out with impetuosity, but no steady, continuous system of operation; and hence the state in which our orchards were at the close of the last century." Let it be added, hence their state at the beginning of the present decade; indeed, hence the condition of the great majority now.

Something like regular and systematic planting has, no doubt, been practised in private gardens for affording fruit for private use, and adding to the number of varieties in existing collections, for there is a natural desire on the part of gardeners and owners of gardens to "try new sorts." A great deal might be said in favour of this. Information is derived thereby, and the most profitable varieties determined in the districts of these private garden experiments that may be of service to the surrounding community. Besides, home interest attaches to such trials, and pleasure is derivable from them, not less than that obtained from growing a variety of flowers by persons whose tastes lie in that direction; and if gardens are made really pleasurable the end attained justifies the means.

The above citation does not, however, refer to garden fruit for private use, but to extensive orcharding, or fruit farming, for commercial purposes. In that respect history has unquestionably repeated itself during the present generation; for whatever of planting has been done during the last three decades has been by fits and starts, or "brought about by urgency, and carried out with impetuosity." There is no wonder that very much alive Americans, who have been in the habit of prospecting this country with their eyes open for years, should not have seen their opportunity, and seized it, by planting extensively, and sending more marketable fruit to the "old country," than they saw was produced and sold in it. Who can reasonably quarrel with them for doing so? The fault that the English Apple supply has been so inadequate, not in quantity so much as in quality, is not theirs, but the direct outcome of the negligence or apathy of English landowners and cultivators. Granting the "law" has prohibited planting in some cases, have those whom the law has not obstructed done what might have been done in providing English fruit of the first condition and in large bulk for our markets? No one can answer in the affirmative. Granted that extraordinary tithe, railway rates, market tolls, and middlemen's charges are impediments to fruit production, what have been the efforts to remove them? There have been practically no systematic organised and persistent efforts to that end. "Papers have been read" on the subjects during recent years, and speeches made by able men at "meetings;" but what care Ecclesiastical Commissioners, railway directors, and market owners for "papers" and "discussions," which end where they began? and what is the use of organisations that begin and end with "papers?"

The periodical agitations that spring up, and subside again, no doubt lead to spasmodic planting. Something calls them forth—some kind of "urgency," an impetuous rush for trees following. The "urgency" for systematic, continuous, and successive planting of trees in this country was never so great as it is now, and if not pursued the Apple trade will soon be practically driven out of the kingdom, so far as regards the production of the fruit. There are signs, however, that the reaction that set in, with the Chiswick Congress of 1883, in favour of an extension of orcharding will not quickly subside, for if the Royal Horticultural Society slackens its efforts in the direction indicated, other agencies will carry out the work, and ought to do so, because experience is proving that the best English Apples quite surpass transatlantic fruit in culinary virtues, and it is only a question of time for the general body of consumers to find it out. But it has to be remembered their first lessons in the education desired will be through the eye, therefore it is very essential that the appearance of samples be good and even tempting, for it is not in human nature to hasten to taste that which is not pleasant to see. It is that fact which the most formidable competitions in the fruit supply have recognised, hence the position they have gained in our markets. After this long introduction to our old friend's writings, we shall have to be content with a small instalment of them this week, reserving the completion for another occasion. Here is his continuation:—

"Having exhibited the low condition of orchards, and the almost total extinction that had befallen those in Kent at the close of the last century, we remarked that the observations we were about to make with respect to Kent would apply equally to the orchards in other parts of the country; and as a proof we find about the same time the late Mr. T. A. Knight was devoting his time and influence to the resuscitation of those of Herefordshire, which had fallen pretty much into the same declining state.

"We have no means of judging, but in the absence of positive evidence on the subject we have every reason to believe that in consequence of the gradual decrease of the home supply the importations of foreign fruit must at that period have been considerable; and so again we are brought to a crisis similar to that with which Richard Harris had to contend nearly 300 years before. We are warranted in stating this supposition, for no sooner had we entered on that long and disastrous war, which raged from 1802 till 1815, during which time our commercial intercourse with the Continent was cut off, and our importations were either considerably restricted or entirely stopped, than the price of fruit rose to an enormous height. But till then men had forgotten all about their orchards, and it was not till "the pressure from without," and the old urgency were brought to bear upon them, that they bethought themselves of the old trees and the old orchards which they had neglected and thrown away years before, and all at once they began to wish them back again. Numerous, doubtless, were the regrets and self-reproaches which many a one expressed when his neighbours returned from Covent Garden or old Fleet Market, rejoicing over the five golden guineas they had got in exchange for a bushel of Apples. Many were the grave councils held across boundary fences of adjoining farms, and weighty were the sage remarks that met with ready acquiescence at market-rooms on market days and church doors on Sundays; and then, after each and all had talked themselves into the assurance that no doubt could exist as to the remuneration to be obtained, they set to work with all possible rapidity, liberality, and hope to redeem lost time by planting orchards, which some seven or eight or ten years afterwards might come into bearing—for there were no dwarf orchards in Kent in those days.

"The high prices continued. Those who had a supply congratulated themselves on their good fortune or good judgment, and those who had none grumbled because they had neither. Thus matters went on with the usual attendants of complaint, disappointment, or dissatisfaction till the conclusion of the war, and then in 1816 there was an importation of foreign fruit. The protecting duty at this time was 3s. 2d. a bushel; but this was not enough, and great was the outcry against such importation being permitted. Memorials were prepared, signed, and presented for an increase of duty. Orchards were again to be grubbed up which had only a few years before been planted. Families were to be ruined, parishes depopulated, and the country sacrificed because the orchardist could not realise "war prices" for his fruit, and because the consumer was enjoying his apple-dumpling twice a week instead of once, as before. The outcry succeeded, and because the price of Apples had fallen one-third Government raised the protecting duty from 3s. 2d. to 4s. in 1819. This was a great deliverance, and so the work of planting progressed to such an extent that where there was an acre planted in 1802 there were ten planted in 1819. Still, notwithstanding the increased duty, there were 92,212 bushels imported that same year. Planting increased; Apples realised from 6s. to 8s. per bushel, and fruit became again one of the most important articles of produce in all the county of Kent.

"A tabular view is subjoined of the quantities of Apples imported into this country from 1819 to 1837, a few months before

the 4s. duty ceased, and also the average prices of English Apples at Covent Garden in each year."

Year.	Duty.	Quantity imported.	Average price at Covent Garden.	Year.	Duty.	Quantity imported.	Average price at Covent Garden.
	s. d.	Bushels.	s. d.		s. d.	Bushels	s. d.
1819	4 0	92,212	notknown	1829	4 0	31,093	3 0
1820	4 0	45,524	notknown	1830	4 0	22 462	5 6
1821	4 0	80,887	8 0	1831	4 0	52 615	6 0
1822	4 0	45,830	8 6	1832	4 0	16,537	3 6
1823	4 0	31,123	7 0	1833	4 0	27.087	3 6
1824	4 0	68 758	6 9	1834	4 0	18,447	3 4
1825	4 0	68,304	8 0	1835	4 0	11,574	3 0
1826	4 0	40,865	7 6	1836	4 0	14,859	3 6
1827	4 0	28,670	4 6	1837	4 0	20,502	2 3
1828	4 0	48.202	5 6				

It will be seen from the above table that there was on the whole a steady reduction in the importation, after the additional 10d. a bushel duty was imposed. There are one or two exceptions, the consequence probably of the partial failure of continental crops ; but it will be further observed that though the importations decreased so did the prices for English fruit. It is also noticeable that with only about two exceptions in nineteen years, the greater, relatively, the importations of foreign Apples, the higher the prices in Covent Garden Market. The figures we are informed were taken from a Government Blue Book, prepared for the purpose of the Parliamentary inquiry, and may therefore be taken as accurate. This result will be not a little surprising to some of our readers, and each must solve the problem in the best way he can. We make no attempt to do so at present, but simply publish what appear the facts of the case as they are placed before us. The reduction of the 4s. duty to 6d. and its influence on importations and prices will next be referred to.

HARDY CYCLAMENS.

Beautiful as are the improved varieties of the Persian or greenhouse Cyclamens, the hardy gems of the border and rockery should not be neglected, yet nowadays very little is written about them.

The common Cyclamen grows wild on the hill sides of the south of Europe, and is so plentiful that the pigs feed upon the roots or bulbs—hence our English name, Sowbread. The C. Coum is found at a considerable elevation on the Alps, where it is protected from the severe frost by the snow. When the warm days of spring partially melt the snow this little plant may be seen with its beautiful deep pink blossom peeping through the white robe of the earth. Thus hardy are the Cyclamens, and yet how many fail to grow and flower them well.

All the species must be propagated by seed. The corms are solid—that is, they have no coats like the Onion or the Hyacinth, and they do not send forth any offsets like the Crocus or the Gladiolus. The seed is very perishable, and will not grow if kept long ; hence it must be sown as soon as it is ripe, which may be known by its changing colour and bursting the seed vessel. Sow it thinly in a wide shallow pot or pan, covering it about a quarter of an inch ; give a gentle watering, and place the pan in a cold frame. Keep the soil moderately moist by sprinkling it occasionally with water from a fine-rosed watering pot. By no means flood it, or pour the water on heavily, for if that is practised the seed will be washed bare and perish. Some of them may germinate, but the greater part will remain under the soil till the spring. In this position they should remain until all grow, and then increase the quantity of water, but only just sufficient to thoroughly moisten it, withholding it then until the soil is moderately dry again.

The beautiful seed leaves will increase in size during the growing season, and each will form a small bulb. Towards the end of June the leaves will begin to turn brown and decay, then they must be allowed to go to rest by giving no more water. Keep them in the pan, placing it in a cool place so contrived that no heavy rains can fall upon it. Towards the autumn they will begin to grow again, and as soon as that is observed stir the surface of the soil, clearing it of moss and lichens or weeds. Then put a thin coating of fresh soil on the surface, and water it to settle it close upon the small bulbs, which should not be covered too deep. I prefer keeping the young corms the second year in the same pan, because the first season they are so very small that there is danger of a considerable number being lost if the attempt is made to transplant them or take them up when a year old. Keep the soil, during the second season, properly moistened, and when the leaves decay allow them again to go to rest. When the season of growth arrives, then keep a watch upon them, and as soon as the least signs of growth are apparent provide a sufficient number of thumb pots, the smallest size made, drain them well, and fill them with the compost, then carefully, with a flat sharp stick, take up a bulb and place it in the middle of the pot, leaving the upper part of it just above the soil. If there are any living roots, preserve, if possible, every one of them. When all are potted give a good watering, and place the pots upon a thick bed of coal ashes in a cool frame. Protect them during the winter from frost, giving air on all favourable occasions. Towards spring they will have made three or four leaves, and the pots will be found full of roots. A shift into a larger sized pot will then be necessary, and will encourage the corms to increase in size very materially. I have shifted them twice in the season with the best effect. By this close attention to repotting, and a due supply of water, the plants will have increased to such a size that many of them will flower ; and, in such species as are apt to sport, will reward the cultivator very probably with some improved varieties. They can be either grown in pots subsequently or planted out.—T. A. B.

CANKER IN FRUIT TREES.

I am obliged to Mr. Kruse for the exceptions he has taken to my reply to his letter, as they give me the opportunity of making more clear some points of the theory suggested by me as to the cause of canker. If this theory is correct the disease is due, not to the presence of anything injurious in the soil, but to deficiency of one or more of the elements of plant food necessary for perfect growth. In the case of the Apple tree, as an unusual quantity of soda is contained in the fruit and of lime in the wood, it is reasonable to infer that a deficiency of one or both in certain soils may affect the nutrition of the tree and be the cause of canker. But however necessary soda and lime may be to the welfare of the Apple, there are other constituents, such as potash, magnesia, iron, and phosphorus, which in certain proportions are equally necessary. The absence of any one of these may induce that condition of the tree which favours the development of canker. When a manure is to be applied with the object of restoring a cankered tree to health, I recommend that it should contain all the above-mentioned ingredients together with a source of nitrogen. It may be that from the composition of the soil one or more of these are unnecessary, but as there are no ready means of ascertaining what are actually required it is better to be on the safe side and apply all, more especially as the superabundance will not be injurious nor entail loss, but on the contrary prolong the fertility of the soil.

Mr. Kruse complains that my statements are general while his were particular. It was not possible for me, with imperfect information of his case, to deal with it other than generally. He now supplements his information as to the iron contained in his soil by stating that Dr. Voelcker's analysis was of the top sod only, and that underneath this there is a thick layer of "red pin." This, I presume is a local name for a hard deposit of sand, gravel; or clay, heavily charged with iron oxide, sometimes called hard pan. This condition of soil and subsoil with the existence of canker in Apple trees is not inconsistent with my suggestion, that the disease is not caused by the iron in the soil. The soil over the "hard pan" may be deficient in one or more of the necessary constituents, and if it be shallow it would sooner become exhausted, and the trees, according to my theory, cankered quite independently of the action of the iron.

The case as stated proves, not that the canker is in any way due to the presence of iron, but only that it is coincident with it It would be profitless to discuss the question further without fuller particulars as to the geological formation and the local circumstances of the particular district. There may be very good reasons why the soil lying directly on the ragstone rock is more fertile than that lying on the "hard pan," which have no relation to the comparative quantity of iron present. Mr. Kruse's statement that dung and such manures as furnish humus are better for trees, because "they dissolve the iron in the soil," is scarcely consistent with his idea that the iron is the cause of the mischief, for iron, if injurious, must be so in direct proportion to its solubility, as it can only act on or be assimilated by the plant when in a soluble condition.

My experience leads me to prefer for the growth of fruit and other trees, especially Roses, a pure loam, any deficiencies in which can readily be supplied by dressings of manures containing what the trees require, and I believe that no form for that purpose is so convenient and economical as what is commonly known as artificial manure. The composition of humus is uncertain. It is a black substance, the result of vegetable decomposition, of which bog earth is an example, and is insoluble in water. It is principally composed of carbon, combined with oxygen and hydrogen. It

may, under certain circumstances by its power of absorptiou, help to maintain humidity in the soil, fix the ammonia, and assist the solution of calcie carbonate; but Liebig, Ville, and other great authorities agree that it contains no nutritive elements which can be assimilated by the plant, therefore it is very improbable that those manures which make humus are the best for fruit trees.—EDMUND TONKS, *Packwood, Knowle.*



ODONTOGLOSSUM EUGENES.

IN a recent issue of the "Orchid Album" illustrations are given of Cattleya Gaskelliana alba, Calanthe masuca, Disa racemosa, and the Odontoglossum named above, which is a particularly beautiful addition to the numerous hybrids. Mr. Williams thus writes concerning it:—

"Odontoglossum has become both an extensive and a very important genus of the Orchidaceæ. The European travellers and plant collectors are continually sending home fresh stock, the result of their labours in various parts of the mountain regions of South America, and as it is now so well understood by growers of Orchids at home that these Odontoglots are purely mountain plants, the treatment they receive on their arrival in this country is so thoroughly congenial that we have succeeded in enlarging the genus to a very great extent with hybrid forms, which have added considerably to the embellishment of every Orchid house in the country. These natural hybrids have been brought about through insect agency, and the great majority of them are welcome additions to our collections. Such is the case with the plant whose portrait is here given, which was introduced by Messrs. Veitch and Sons of Chelsea, and flowered for the first time in this country in the garden of His Grace the Duke of Sutherland at Trentham. It is a very handsome hybrid, and its parents are supposed to have been Odontoglossum Pescatorei and O. triumphans. In general habit of growth it most resembles the first-named plant, but its flowers partake more of the character of O. triumphans. We are heartily glad to find so many natural hybrids are being discovered in their native wilds, for notwithstanding the skill and energy of our hybridisers at home, very little success has attended their labours with this genus; but we hope soon to see this difficulty overcome, for there is doubtless a great future yet in store for the numerous admirers of the Odontoglossums. The most forward seedling Odontoglots we have yet seen are in the garden of H. J. Buchan, Esq., of Wilton House, Southampton, raised by his gardener, Mr. Osborne.

"Odontoglossum eugenes is a magnificent evergreen plant, with bright green foliage; the inflorescence is arched and many-flowered, producing a grand effect when the blossoms are expanded. The flowers are 4 inches across, and of a bright, showy, and pleasing colour; the sepals and petals are of a pale yellow, distinctly margined and tipped with deep yellow, the centre and base of the petals white, both sepals and petals being heavily blotched with chestnut-brown; lip white, with yellow crest, and a large blotch of chestnut-brown in the centre, while the column is white. This plant flowers during the months of June and July, and lasts in full perfection for six weeks. The length of time Odontoglossums retain their beauty renders the flowers of these plants so valuable; moreover, we have frequently observed that the flowers of those kinds which open during the dull heavy days of winter and early spring do not suffer from the fogs—which we often experience at that season of the year—in the manner that many other orchidaceous plants suffer, so that this is another favourable argument for the cultivation of the various members of this truly beautiful genus.

"This plant requires to be treated in precisely the same manner as its supposed parents. It should be grown in a cool house, and shaded from the hottest sun in summer, but in the autumn and winter shading may be entirely dispensed with. In the spring, when the sun begins to rise high and shine powerfully, will be soon enough to think of shading the Odontoglots; but, as we have frequently remarked, these plants should never be shaded after the sun is on the decline on a summer afternoon, because we cannot in this country expose them to a greater share of light than they enjoy, and there is little doubt this thorough exposure is one of the great secrets in the successful management of Orchids. Treated in this manner the plants form fine growths, and ripen up their bulbs thoroughly, from which fine spikes may be reasonably expected, and fine spikes produce fine flowers. On the other hand, weak growths cannot be expected to produce like results, but must lead to failure and disappointment."

ANGRÆCUM SESQUIPEDALE.

AT Witton Park, near Blackburn, the country home of General Fielding, there is a fine specimen of the above named grand Orchid in full beauty. The plant, I understand, has been one of the principal attractions of Witton Park for many seasons, but this year it is better than ever, there being no less than seventeen of its peculiar though beautiful flowers. It is intended, I believe, to have the specimen photographed. Mr. Blench, the gardener, evidently understands the requirements of this Orchid.—VISITOR.

GRAPES SCALDING.

I AM much obliged to "J. B." for submitting for my consideration a case of scalding very similar to that given by the Editor in answer to a communication of Mr. Simpson's on page 392. The Editor there says, "The subject of Grapes scalding is neither exhausted nor settled," and I cordially agree with him. He goes on to say, "We have known houses of Lady Downe's Grapes in which scalding is practically unknown, and also a house of Black Hamburghs in which it was not possible to prevent the fruit of one Vine scalding by any method of ventilation, while not one injured berry was seen on the other Vines in the same house." For all practical purposes the two cases—this one, and the one given by "J. B." on page 517—are the same, only it is unfortunate perhaps that the Editor's Vines were not Lady Downe's instead of Black Hamburgh. But these are by no means solitary cases. For some years I had the charge of a span-roofed house running north and south, 40 to 50 feet long and 12 to 13 feet wide, planted with Lady Downe's with the exception of one Vine, and that an Alicante. This Vine filled three lights on each side of the house, and always carried the finest Grapes; but they were scalded every season, or nearly every season, while not a berry of Lady Downe's was affected. The Vine of Alicante was at the north end of the house. Ventilators on each side at the base could be opened, and also at the top on the west side. To try and prevent scalding taking place ventilators were arranged as well on the east side, but the Alicante scalded as badly as before.

I am rather surprised that "J. B." did not submit this difficult matter to those who have been so ready to condemn my contributions on Grape-scalding. The fact that two other varieties than Lady Downe's have scalded under similar conditions, as far as appearances are concerned, at least, strikes at the very root of the constitutional theory. It goes further, and helps to prove that Lady Downe's amongst Grapes cannot be regarded as the sole variety liable to scald. It proves more than this, that scalding is not alone due to defective ventilation, although I believe it more generally arises from that than any other cause. I advanced overforcing, which I have had ample proof to convince me that it is another cause, and one that will end as disastrously with the Vines, whether Black Hamburgh or Lady Downe's, during that critical period as with the Peach or Nectarine. I also believed in other causes, and perhaps some of the solitary instances of scalding given above may be traced to one or other of them. I believe at that critical period that any check to the Vine, whether arising from inactivity of the roots, dryness, overfeeding, or an insufficient supply of food in the border that the Vine might require just then, would bring about scalding.

It is very difficult matter for anyone to state the exact cause of scalding in any of the three cases given above. To do this it is necessary to be on the spot and investigate the case carefully, and even then it might take a long time to trace the evil to its true source. In the case of the Alicante, the cause was dryness at the root, which was found by accident. The Vine had grown straight out of the house, through a walk and into a small bed planted with Lily of the Valley, through one end of which hot-water pipes passed. The Vine flagged, and watering the border inside had no effect in restoring it. It recovered at night, and the leaves drooped daily for a week or more during the daytime. The weather being very dry we soaked the Lily bed with liquid from a cesspool, which gave new life and vigour to the Vine. By attention to the watering of this Lily bed afterwards scalding was unknown in the house as long as the Vines occupied it.

Your correspondent, Mr. J. B. Riding, on page 470, states that he has not ventured an opinion as to the cause of scalding. Without going back, I think he once before reminded us of this. It appears, therefore, that he has made a mistake in imputing to me a modesty that he possesses in a marked degree. It is evident he has been too modest to give us his opinion on the cause of

sealding, but, now that he has been invited to do so, we may look forward with interest.—Wm. Bardney.

THE NATIONAL AURICULA AND CARNATION AND PICOTEE SOCIETIES.—December 14th, 1888.

Is it not a somewhat unusual proceeding to report the minutes of the committee of any society unless by authority of its officers? An annual meeting is a different matter, being open to all, and I think it is a pity that the notice of the last Committee meeting should have been inserted, as it is inaccurate both in its statements and omissions. The statement that a new class for yellow ground Picotees was made to include selfs is a mistake. It was to include, not selfs but Carnations, as it was felt that some of the striped flowers were as worthy of recognition as the edged ones. The balance in hand was not £40 but £30, nor had I or Mr. Douglas anything to do with it. It was to be invested by Messrs. Hibberd and Leonard. The writer omitted to state that £5 was taken off the classes for twenty-four Carnations and twenty-four Picotees, and that an additional class was made by dividing scarlet and rose-edged Picotees.—H. Honywood D'Ombrain, *Chairman of Committees.*

[The question of reporting the transactions at committee meetings appears to us to be entirely one for committees to decide. When a report is received by us from a member of a committee, we take it for granted its publication is desired, and that is our justification for its insertion.]

DIANTHUS GLACIALIS.

A charming little alpine gem, which is admirably adapted for any moderately elevated nook in a rockery, or crevices between slabs of

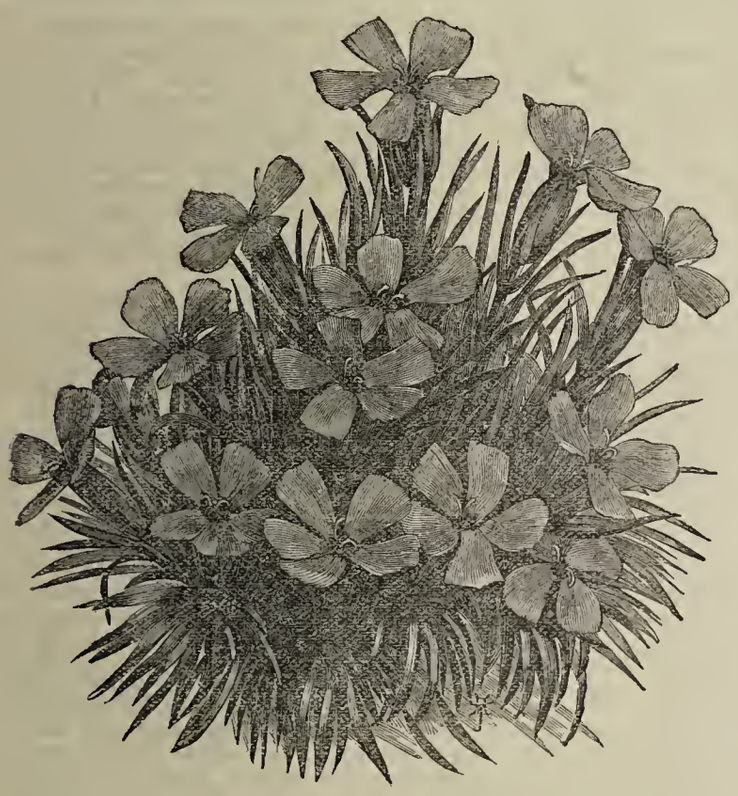


Fig. 62.—Dianthus glacialis.

stone. It forms a neat compact little tuft of leaves, and produces its comparatively large rose-tinted flowers freely when the situation suits it. Some of these small alpine plants are rather fastidious and difficult to manage under cultivation, but this is not the case with Dianthus glacialis if care is taken to protect it from enemies and to provide a position free from stagnant moisture. The latter is essential, and more of such plants suffer from neglect in this matter than in any other respect.

MANURE AND MOISTURE.

Mr. Iggulden's very instructive article on Pear trees brings to light a system of feeding which is but little treated upon in gardening literature. It is a common fallacy that manure must not touch the roots of the plant which it is intended to nourish, but should only be applied as a top-dressing, this being in many cases several inches from the roots. Now in the case of young or newly planted trees the latter method is without doubt the proper way in which it should be applied; but when trees are old and showing signs of barrenness, there is nothing like baring the roots and placing it thereon, covering this with a portion of the soil again, as stated in the article referred to above. No one who has seen the cordon wall at Marston on such an exceptionally bad Pear season as the past can doubt the soundness of Mr. Iggulden's remarks. The general evenness and quality of the fruit when I had the pleasure of seeing it on the trees during a hurried visit was remarkable. Unfortunately, the time was too short for me to inquire into many details—which I am sure would have been freely told me—so that I have read with double interest the facts about Pears.

But it is not fruit trees alone which I have seen benefited by this treatment. A successful Rose-grower was showing me his favourites several years ago, and as we walked round I could not but admire the general condition of the plants, remarking at the same time that the soil must be of the nature to suit Roses. "Quite the opposite," was the reply, as he stirred the gravel, for it was little better; "but every year I clear away the soil down to the roots, and give each one a good thickness of manure, facing it with the soil again, and you see how they like it." They liked it so well that I gave those under my charge the same treatment the next winter with such a satisfactory result that I still continue the practice.

That insufficient moisture at the roots is in a great measure the cause of many failures amongst wall trees is an opinion which I have held for some time, especially as regards Apricots, and that opinion was strengthened considerably in my run through Marston Gardens. My time was too short to note with exactness, but as nearly as I can remember, running parallel with the cordon Pears were some of the most perfect specimens of Apricot trees which I have seen—not a gap anywhere, nor a decaying branch. But on another wall, where they were under the protection of a glass coping, an occasional gap could be seen, as is so frequently the case. It is not to be inferred from this that the protected trees were neglected with water, but those which were exposed must have had it far more continuously. I have noticed that there is a greater absence of dead branches on Apricot trees than usual this year, and it seems to me that the wet has something to do with that result. Mr. Iggulden's views on this subject would, I am sure, be appreciated by many readers of the Journal.—M. D.

THE NATIONAL DAHLIA SHOW.

The usual annual meeting of the supporters of this Exhibition took place by kind permission at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on the 14th inst., Mr. Harry Turner in the chair, present also—Messrs. E. Mawley, T. W. Girdlestone, W. H. Williams, J. Burrell, Geo. Harris, A. Rawlings, R. Dean, J. T. West, and H. Glasscock, Hon. Secretary and Treasurer. The balance sheet showed subscriptions for the past year amounting to £59 10s. 6d., with the usual gift of £50 from the Crystal Palace Company. The expenditure amounted to £114 10s. 6d., including £103 10s. paid as prize money, and the balance was made up by a *pro rata* deduction from the prize money of the trade exhibitors in accordance with the provisions of Rule 10. The accounts were duly passed. A conversation then took place on the advisability of forming a permanent society with proper rules and regulations and a properly constituted executive. It was thought that if this step was taken several of the exhibitors who do not now subscribe to the prize fund might be willing to do so. Eventually the matter was left in the hands of the Committee. Mr. H. Glasscock reported that he had received a communication from Mr. W. G. Head, on behalf of the Crystal Palace Company, to the effect that the Directors would give the same amount of money as last year towards the compilation of a prize schedule, and also supply as heretofore the necessary staging, take the entries, and print the schedule of prizes. This offer was accepted with hearty thanks to the Crystal Palace authorities, and the first Friday and Saturday in September were named as the most suitable days for the Show in 1889, subject to the approval of the Manager of the Crystal Palace.

It was resolved that for the future the Judges should be selected from the exhibitors, the amateurs to judge the traders' flowers, and *vice versâ*, the luncheon to the Judges to be discontinued as a charge in the balance sheet. The schedule of prizes as offered last year was passed as that for the Show in September next. The Hon. Secretary stated that he had been in communication with the Trustees of the Turner Memorial Fund with a view of obtaining a grant for the Exhibition next year, but he had been informed that the money had been voted for the promotion of Tulip culture. Mr. Glasscock intimated that owing to age and increasing infirmities he should have to relinquish the post of Hon. Secretary and Treasurer, and he proposed that Mr. T. W. Girdlestone should be elected in his stead. Mr. Girdlestone having consented, the nomination was seconded, and the election carried unanimously, A cordial vote of thanks was passed to Mr. Glasscock for his past services. In revising the list of officers and Committee the name of Mr. Glasscock was placed among the Vice-Presidents. The following were added to the Committee:—Messrs. W. Hapthorpe and J. Burrell, Cambridge; J. Cheal, Crawley; J. Gilbert, Ipswich; W. Holmes, Hackney; Geo. Paul, Cheshunt; T. J. Saltmarsh, Chelmsford; J. Tranter, Henley-on-Thames; and J. Walker, Thame.

The proceedings closed with a vote of thanks to the Chairman for presiding, and to the Horticultural Club for the use of the room for the meeting.



THE NATIONAL CHRYSANTHEMUM SOCIETY'S DINNER

THE large dining hall at Anderton's Hotel, Fleet Street, was crowded on the occasion of the above dinner on Thursday night last. The proceedings were most agreeable throughout, and evidently enjoyed by the company. The dinner was to have commenced at six o'clock, but time enough elapsed after that hour to take note of the Chrysanthemum lovers assembled, and, let it be asked *en passant*, Does it not speak volumes for the popularity of the President that he should have received so hearty a reception after keeping a gathering of hungry men waiting half an hour for their dinner?

The prominent officials of the Society, Messrs. Ballantine, Holmes, and Starling, all good men and true, were there, of course. So was Mr. Harman Payne, the foreign corresponding Secretary, who is working well for the Society, and is a pleasant table companion withal; Mr. George Gordon, whose capital speech will be referred to later; the Rev. W. Wilks, Secretary of the Royal Horticultural Society; Sir Lewis Pelly, Bart., M.P.; Mr. W. G. Head; Mr. E. Jukes, a popular member: Mr. Stevens of Putney; Mr. Herbst, Mr. Ironsides; Mr. Needs, West Kent Society; Mr. Blake, Mr. Lynes, Mr. Addison, Mr. John Laing, Mr. J. H. Laing, Mr. B. Wynne, Mr. A. F. Barron; three respected representatives of the house of Veitch in Messrs. T. Manning, J. Davidson, and Swift; Mr. Richard Dean, and many other "familiar faces," whose names could not be obtained—not by any means an unrepresentative assembly, but the list of absentees was wofully long. Mr. H. J. Veitch was not there, important business claiming his presence elsewhere, and Dr. Hogg had been called to the country, both sending letters of regret. Mr. J. Wright, of this Journal, was not well enough to attend. Mr. Lewis Castle's face was missed through a domestic bereavement; so was the athletic form of Mr. Edwin Molyneux, who, be it known, can wield the bat and ball as well as grow fine Chrysanthemums. Mr. Gibson was looked in vain for, and Mr. Laing, sen., Mr. Cannell, Mr. Davis, Mr. Jones, and many others well known in the Chrysanthemum world were conspicuous by their absence.

The dinner? Let it suffice to say, in the accepted phraseology, that it was "done justice to." Grace before meat was said by Mr. Wilks, and sung after meat by the quartette of vocalists—Misses Mary Belval, and Ethel Winn, Messrs. John Bartlett and Franklin Clive, who were engaged to entertain the proceedings with song.

After the usual loyal and patriotic toasts the Chairman rose to propose that of "Success to the National Chrysanthemum Society," and gave a *résumé* of the Society's operations during the past year. He would first refer to the winter Show held early in the present year at the Royal Aquarium. At the time the Exhibition was held the weather was extremely bad, but nevertheless the show was a great success and a complete surprise to them. The exhibits were everything that could be desired, and special mention ought to be made of a stand of six Japanese blooms staged by Messrs. Drover, which were of phenomenal quality, and thoroughly deserved the special certificate awarded to them. Later on the Society determined on the preparation of a Catalogue of Chrysanthemums, and aid was invited from men all over the country, the work of arrangement being entrusted to a Committee consisting of Messrs. Castle, Gordon, and Payne. They had done their work well, and the Society had awarded each a silver medal in recognition of his services. (Applause.) It had been decided that the gentlemen named should form a permanent Catalogue Committee with a view to the further improvement of the Catalogue. After commenting on the appointment of Mr. Payne, foreign corresponding Secretary, the Chairman referred to the Society's September Show this year. This, he said, was noteworthy for the fine quality of the exhibits, and in every respect worthy of the Society. Coming to the great November Show, he thought that the exhibits, which reached the extraordinary number of 504, were of the highest order. He would add that the Society now had upwards of 600 members, and forty affiliated Societies, but the subscription was very low, and without some extraneous aid they would not be able to prepare such a schedule as they had arranged. In the course of his speech, which was much applauded, the Chairman referred to a humorous report of the dinner of last year that appeared in the *Journal of Horticulture*, and hoped the "chiel who was among them taking notes" on that occasion was present on this to give them another "gem."

Mr. Ironsides proposed "The Patrons, Fellows, and Guests," remarking that these gentlemen gave very substantial help, and that their numbers ought to be largely increased. He coupled with the toast the names of Sir Lewis Pelly, Bart, M.P., and the Rev. W. Wilks. Both responded in humorous terms, the former reminding his hearers that the Chrysanthemum had been chosen by the Emperor of China as his crest before all other flowers. Mr. Wilks, responding for the Fellows, said he did not see many present. They had been described as the mainstay of the Society, but he should like to see that mainstay bigger. The reverend gentleman, ingeniously misunderstanding the proposer of the toast, then went on to say that they had also been described as ornamental. He thought he had at times been useful, perhaps when others had not appreciated it, but he had never considered himself ornamental (Laughter). Tastes, however, differed, some preferred the incurved bloom, some the ragged Japanese. (Much laughter).

A presentation of medals having taken place—Messrs. Bradbury, Cannell, Davis & Jones, Fincham, Ironsides, Sullivan, Veitch, &c., being among the recipients—Mr. Holmes read over a list of those to whom prize money had been or would shortly be paid, the total sum being stated to approach £250. He was followed by Mr. Jukes, who proposed the toast of the "President, Vice-President, and Treasurer" in eloquent terms. Mr. Sanderson, the speaker thought, was essentially the right man in the right place. As an exhibitor of incurved blooms the President was very hard to beat, and few indeed could compare with him. Mr. Ballantine, the Vice-President, too, did a considerable amount of work for the Society in a very quiet way, and was of great help to the Secretary in the fulfilment of his onerous duties. As for the Treasurer (Mr. Starling), he had taken the reserve fund under his special care. It was his pet child, and though not large he was assiduous in pressing its claims. The Society, remarked Mr. Jukes in conclusion, was most ably served by its officers.

The President, in responding, deprecated the contribution of such important services to the Society as those attributed to him, but if he had not done much good he had at all events done his best to encourage the young. Messrs. Ballantine and Starling also responded in suitable terms, the latter remarking that although the financial position of the Society was all that could be desired, he would like to see the reserve fund larger. It now amounted to £80; he would like to leave it with £500 or £1000.

Mr. Herbst proposed the health of the Hon. Secretary, Mr. Holmes, who, he said, had by his administrative talent, energy, and force of character made the Society the most substantial in the kingdom. The interest in the Chrysanthemum had now spread all over the world. Valuable as was the work rendered to any society by its Committee, the Secretary was after all its life and soul. He (Mr. Herbst) would, however, like to make one suggestion. The race of Chrysanthemums had been improved in one direction, but in another there had been no improvement at all. He referred to the plants in cottage and villa gardens. One saw there the same miserable little plants grown years ago. The Society had catered for the rich, let it now do something to improve the Chrysanthemums in poor men's gardens.

Mr. Holmes, on rising to respond, was very warmly received. This was, he said, the eleventh year in which he had responded to the toast of his health as Hon. Secretary. During that period great changes had taken place, and he had watched the progress of the Society year by year with pride, satisfaction, and pleasure. When the books were first handed to him it numbered fifty-five members, and had an income of less than £75 a year. Now, he was proud to say, the members numbered 633, and the income during 1888 would amount to nearly £1000. (Cheers.) Each year new features in the work of the Society had been introduced and new successes achieved, and the present year had been one of the most eventful of all. The great Show at the Aquarium could, in spite of prophecies to the contrary, of the trying season, of the terrible frost early in October which decimated many collections, and of the Chrysanthemum societies which held shows in all parts, be claimed as a grand exhibition, second to none ever held at the Aquarium or anywhere in the kingdom. Then there was the Catalogue, which had already been referred to, and the attempt to hold a provincial show. In reference to the latter, he must be careful of the terms he used, for opinions appeared to vary as to its success. For his part he repeated his opinion that it was a great success save in the want of competition in the open classes. He believed that in this Exhibition they had started a phase of work which must be persevered in year by year. The Conference, moreover, that was held at the same time was, it was the unanimous opinion, a success, and was, he thought, the most practical assembly of Chrysanthemum growers ever held. He hoped that the Exhibition would resolve itself into as important an affair as the November show, and concluded, amidst hearty cheers, by saying that he had no doubt of the future.

Mr. George Gordon, in responding for the Committees, attributed the success of their operations to the great interest which every member took in the work in progress. The Floral Committee had received great credit, but much also was due to the General Committee, by which the former was appointed. They did not, he said, take into consideration if one member could grow a Pumpkin half an ounce heavier than another, nor study his geographical position, but simply considered his suitability for performing the duties that would be assigned to him. He (Mr. Gordon) came into contact with large numbers of Chrysanthemum growers, but he had never heard the judgment of the Committee in the award of certificates called into question. The Catalogue, he thought, would prove of immense benefit to the Chrysanthemum world. Mr. Payne had already sent copies to America, Australia, Belgium, France, and Turkey, and would shortly be despatching a package to Japan. He would like to impress on other societies the great advisability of taking this Catalogue as the basis of their classification of varieties. He believed it would be of great advantage to exhibitors if such were the case. Numbers of varieties were easily separable into their respective classes, but with others it was difficult to decide whether they belonged to the

reflexed or the Japanese. An exhibitor might be disqualified at one exhibition where the National Society's Catalogue was not recognised for including a certain variety in his Japanese blooms, and again at the next for placing it among the reflexed. (Cheers).

The toast of the "Affiliated and Kindred Societies" was proposed by Mr. Blake and responded to by Mr. R. Dean, the latter remarking that he took every opportunity of pointing out the advantages of affiliation with the National Chrysanthemum Society. When he was asked what advantages would be derived from such a proceeding, he replied that they would come in contact with one of the best Presidents in the country. If he was asked who that was he replied, the "Grand Old Mum," and they joined at once. (Loud laughter). With the toast of the "Stewards," proposed by Mr. Payne and responded to by Mr. Long, and that of the "Press," proposed by Mr. Addison and responded to by Mr. W. P. Wright, in the absence of his senior, a most pleasant and enjoyable meeting terminated.

CHRYSANTHEMUM CULTURE AND VARIETIES.

[Read by Mr. Charles E. Pearson of Chilwell, at the Horticultural Club, on December 11th.]

I DO not propose to open my paper in the usual way, with a disquisition on the history of the Chrysanthemum, the exact date of its introduction, its use in and influence on Japanese art, and similar matters, partly because I think these things of very secondary interest to a horticultural association, and partly because I must confess to a blissful ignorance concerning them. I will therefore pass at once to cultural details, but before doing so must ask your kind indulgence if a great part of what I have to say appears stale news to you, the subject having been thrashed out so thoroughly that it is very difficult to extract anything fresh from it, though there is still need to keep reiterating the first principles of culture, as no easily grown plant is, leaving out special districts, more often seen in a miserable half-neglected state than the Chrysanthemum. Because the plant will exist with very little care it is often left until everything else in the garden has received attention, and is then attempted to be rushed with stimulants just at the end of the season. The fact is that to obtain any measure of success in Chrysanthemum growing, the plants should never stand still from the time the cutting is struck until the flower is in perfection; the successive pottings should not be delayed a day after the plants are ready, nor should they ever suffer by want of water through the season.

Leaving the question of seed-raising, the first step in cultivation is of course taking the cuttings. This may be done from November to April and even May, but I think the best time is the beginning of December—that is, if one has all the conveniences for growing the plants properly after being struck. Many amateurs and people whose accommodation is limited strike the cuttings, and then allow them to become drawn and spoilt for want of room to pot them at the proper time. Those in this case would do better to preserve the stumps of their Chrysanthemums in a cold frame until the spring, and then insert the cuttings when there is more chance of their receiving proper attention. In choosing cuttings preference should be given to the stout suckers which push from the roots when these can be obtained; but it is, however, not always possible to get these, especially from the Japanese kinds, many of which rarely throw up a sucker and only produce stem cuttings sparingly. Care should be taken in cutting these last down not to cut too low, but to leave a foot or so of the old stem, for want of which precaution we lost all our stock of Marguerite Marrouch some two or three years ago, not one of the stumps producing a cutting. Thousands of cuttings are spoilt annually by too much heat, becoming thin, spindly, and often mildewed, after which no amount of care can coax them into first-class plants. Putting them into perfectly cold frames is, I think, going to the other extreme, at least in our cold district, though much preferable to too much heat.

After several experiments I have settled upon one of our small houses as the best place for the purpose. It is about 30 feet by 10, has a path down the centre with a bed on each side, in which the cuttings are plunged. One 4-inch pipe runs down each side of the house and returns under the beds, and as these pipes cannot be made really hot the heat is just sufficient to keep the frost out. Though Chrysanthemums will strike in a cold frame, I am convinced that much time is lost during severe frosts, when for a month at a time they just exist under coverings of mats, &c., which of course exclude light as well as frost.

In taking cuttings begin if possible with the late flowering kinds, as Cherub, Mrs. Heale, Meg Merrilies, Princess Teck, Elsie, &c., which require a long season of growth; insert them, that is all the incurved and Japanese, singly in small thumb pots. The Pompons and singles may be put seven or eight round a 4-inch pot. The reason for this is that some cuttings will strike much before the others put in at the same time, and so become drawn before being taken from the bed. The singles and Pompons may be kept in order by pinching the points out as soon as they begin to grow, which cannot be done with the others if they are intended for specimen blooms. No glass or other covering need be placed over the bed except for the latest cuttings in spring, which may require a newspaper laid over the beds for shade in the brightest part of the day. As soon as the cuttings are rooted they should be at once removed to a bench nearer the glass to prevent drawing, one covered with ashes or cocoa fibre being preferable to bare wood, as it is easier to keep them in an equable state as regards moisture.

At this stage the grower should make up his mind if not done before what style of plants he intends to grow, whether the object is exhibition, cut blooms, or conservatory decoration.

Some people are utterly blind to the beauty of a flower which will not at least figure creditably on the front row of a showboard, while others never attempt to develope a bloom to the extent of which it is capable. I think myself that perfection as in most things lies between the extremes, and is best attained by endeavouring to bring each variety to perfection on its own lines—*i.e.*, in the way best suited to its natural character. There are many varieties, as for instance Bouquet Fait, W. Robinson, Source d'Or, L'Or du Rhin, Chevalier Domage, Tendresse, &c., which naturally form dense, bushy plants smothered with bloom, forming beautiful objects for the conservatory and providing abundance of flowers for cutting. The only effect of disbudding these is to destroy the natural grace of the plant and throw away nine-tenths of the flowers, as the blooms are very little larger on a disbudded plant than when grown naturally. These remarks of course apply still more forcibly to the Pompons and singles. On the other hand, those who never disbud make almost as great a mistake, as it is only by limiting the bloom that the proper form of the incurved and the splendid size and colour of the Japanese varieties can be properly brought out. The waste is also not so great as it appears at first sight, as I have often noticed that perfect flowers, I suppose from their greater substance of petal, last much longer than ordinary ones.

The varieties which specially require disbudding are the large incurved kinds, as the Queen, Beverley, and Rundle families, and the largest Japanese, a list which may be got from the first prize lot at any good show. There is a further class, which is utterly useless unless well grown and disbudded to the crown bud, and which should be avoided by the ordinary gardener who does not make Chrysanthemums a speciality and study the peculiarities of each variety; of these are Comte de Germiny, Boule d'Or, Grandiflorum, Thunberg, Baronne de Prailly, &c.

An advantage of the mixed system of growing is the possibility of making more artistic groups when the plants are of varying size and habit, which give more light and shade in grouping and avoid the appearance of a gaudy carpet, which is attained when all the flowers are brought into one plane. It follows that to do this each variety must be studied separately and notes made of its habit, size of bloom, &c. It is not a bad plan with a new variety, if the plant be received early enough, to take off the top, strike it and run up without stopping for one or two good blooms, growing the decapitated plant into a bush, thus getting a good idea of its capabilities the first season. Going back to our cuttings, which were just struck, after being taken from the bed and placed in a lighter position for a few days, they should be transferred into small pots, about 2 inches will do, the soil used being decayed turf lightened with sand and leaf soil; this should not be made too firm the first potting, as the young plants recover and begin to grow again much more quickly if rather lightly potted.

Between now and the end of May is a very critical time with Chrysanthemums, during which numbers are wholly or partially ruined, many people having their frames filled with bedding plants, &c. During spring the Chrysanthemums have to put up with a position in the greenhouse, yards from the glass, and probably 10° or 15° too hot. They may remain in the greenhouse if cool and airy until the second move into 5-inch pots, after which they should certainly go into the cold frame, where, as soon as they have recovered from the potting, all the air possible should be given by tilting the lights, and, if possible, removing them altogether on warm days. The object is to secure a slow, sturdy growth as a good foundation for the future specimen. If grown too quickly the plants are ready for the final potting before the cultivator is, as this cannot be done until it is safe to place them outside, at least by anyone with ordinary accommodation.

This brings us to the most important operation of the series, the final potting. The principal points in this are the size of pot used and the character of the soil. The first depends upon the class of plant required. I use three sizes—7 inches for the plants to be run up with single stems,

except the Queen family, which require more room, and have 9 inches; 10 inches for those to be stopped and grown as bushes; and for forming large masses for cutting, 13 inches are employed, putting three plants in each. Our soil is turf from a rather light loam (alluvial drift), so that little or no sand is required; it is, however, enriched by the addition of manures. We mixed up this year about sixteen cartloads; this contained three good loads of dung, scattered between the layers of turf when it was stacked, about three months before wanted, to which was added half a load of wood ashes, 5 cwt. of bone dust, and 6 bushels of soot, the whole being turned two or three times to incorporate it thoroughly. In potting the last time the compost is made thoroughly firm, using a wooden rammer for the purpose.

The next item to be referred to is stopping. In the first place those plants which are required to produce exhibition blooms should not be stopped, but grown steadily on to their natural height, varying according to the variety from 4 to 6 and even 8 or 9 feet; those for cut bloom and decorative work may be stopped when 5 inches high, again after making three or four leaves, and at intervals until the end of May, avoiding performing the operation within a few days before or after potting. If the aim is to get flowers of as nearly full size as possible on dwarf plants, the "cut down" system, as it is called, may be followed; this consists in letting the young plant grow uninterruptedly until it is established in its 5-inch pot, then cutting it off to within 4 to 6 inches of the soil, after which keep somewhat dry until the stem has broken; allow from four to eight growths according to the kind to grow without further interference, disbudding each to the crown bud. The time for cutting down varies with the character of the plant operated on. Free growing early varieties as the Rundles may be cut as late as the first week in June, but very late sorts as Princess Teck, Meg Merrilies, &c., should not be left later than May 1st, the Queen family about the second week of May, other kinds between these dates. Some varieties do better under this treatment than others, and are almost as good as if grown to full height; examples—E. Molyneux, the Queen and Beverley families (especially the latter), Meg Merrilies, Mr. Garner, &c., while others have proved comparative failures under it; of these may be mentioned Lord Wolseley, Prince Alfred, Jeanne d'Arc, Grandiflorum, Duchess of Albany, Marsa, and all the Anemones.

Now as to disbudding, which always appears somewhat of a mystery to the uninitiated, though very simple when once grasped. A Chrysanthemum when grown naturally produces three kinds of buds—viz., the July, the crown, and the terminal. The July, called so from the general date of its appearance, need scarcely be considered practically, as the shoot grows past it, and it remains a bud, withering up in time; if the shoot be stopped at this bud when it appears, it will swell and grow into a flower, but nearly always a very coarse and deformed one. The crown bud is the one formed at the end of each of the three branches into which an unstopped plant naturally divides, and appears from the beginning of August (except in abnormally early plants) and onwards. Soon after the formation of this bud at the end of the branch three small shoots may be seen starting from just underneath it, and if the crown bud is intended to be retained for a show flower these must be removed early, or they will rob it and seriously retard its development. The removal of these three shoots to throw all the strength into the crown bud is what is technically called "taking" the bud. Most growers do this with a knife or pointed stick as soon as they can be seen, often injuring the stem, which is very soft at this time, and causing the bloom to come lop-sided. I think a much better way is to wait until the shoots are just long enough to get hold of and break them off with the thumb and finger. N.B.—The shoots are brittle and break easily in the early morning before the dew dries, when the sun is hot they are tougher. If these three shoots above referred to are allowed to grow, each forms a bud at its summit called the "terminal," generally surrounded by a cluster of smaller ones.

The great point in disbudding for exhibition is the proper time to take the buds; this varies from the beginning of August for the very late kinds to the end of the month for the earlier. As a rule the Japanese may be taken before the incurved, which come coarse and out of character if taken too early, about the 20th being soon enough for them. When the crown bud appears too early, it and two of the shoots springing from its base should be removed, leaving the third shoot to produce a flower from the terminal; this, in the case of some incurved varieties will, if not quite so large, be much more refined than from the crown. By careful disbudding, plants which would naturally flower from early November to Christmas may be bloomed all at one time.

Feeding.—Almost every grower has his nostrum which he swears by (or makes a deadly secret, according to his character), but my own practice is based on the idea that no one mixture contains every necessary ingredient, and that variety of food is most conducive to success. I begin with a little weak liquid, containing soot and cow-dung, as soon as the pots are full of roots after the last move; this, however, very diluted until the buds begin to form, after which time watering is done somewhat as follows:—first time, clear water; second, diluted stable drainage; third, clear; fourth, chemical manure (Beeson's, guano, Pearson's, &c., in turn); fifth, clear; sixth, the stable drainage again very weak (the tank in which first dose was mixed filled up with clear water); seventh, clear.

Other points to be noted with regard to feeding are—always use manure water clear, and do not stir up the tank before drawing from it; never give a dry plant liquid manure; too much ammonia (the sheet anchor of many growers) spoils the foliage, making it brittle; some plants are much more tender at the roots than others, and if watched will give warning when you are "coming it too strong;" and, lastly, in a sunless season like the past it is easy to over-feed and produce coarse wood which cannot be ripened.

More definite information is still much needed as to the effect of different mixtures on the Chrysanthemum. It might be obtained with comparative ease if half a dozen good growers would each give their recipes, to be placed by the experimenter in as many tubs, each having a row of plants attached to it, to be watered from it. A few experiments of this kind would elicit much useful knowledge.

I should also be very pleased if any of our members could explain the erratic behaviour of some Chrysanthemums as regards time of flowering and colouration; as examples, I may say that last year Martha Harding flowered after our show was quite over; this year, grown in two or three different ways, it was in each way among the very earliest. L'Ile des Plaisirs two or three years since was nearly vermilion, and so gorgeous as to puzzle numbers of people as to its identity, since when it has been only noticeable from its dinginess; Tokio also varies almost to the same extent.

Insects and Diseases.—The Chrysanthemum is less affected by these than many other of our cultivated plants. The following are, nevertheless, troublesome at times:—Green and black fly, earwigs, and mildew. The larva of the lady-cow will often keep the first two in order through the summer if not disturbed, and the larva of the lace-wing fly or golden-eye is also a splendid aphis destroyer, but is, unfortunately, rather plain and grubby in appearance, and is, therefore, by most gardeners looked upon as a "groob," and squashed accordingly. If the aphis, in spite of these enemies, increase too fast, they should be dusted with tobacco powder on a dewy morning, the best preparation I have tried being that called "Thanatos," sold by Messrs. Wood & Son. This should not be done after the plants are housed, as it gives them a filthy appearance when the rain cannot wash it off; a better plan being to give a good fumigating the first quiet night after the plants are inside, whether they appear to want it or not; they will then keep clean until after the show is over. For earwigs the only plan is trapping, and the best traps pieces of dry beanstalks; these should be looked over every morning and the earwigs blown out into a pan of water. If mildew appears while the plants are outside syringe them with the following—1 lb. softsoap, ½ lb. sulphur, and 10 gallons of soft water; mix with boiling water, and add the remaining quantity cold, stir constantly while using. This is a perfect cure, and far before any method of dusting sulphur, &c. After the Chrysanthemums are housed, a coat of sulphur and linseed oil on the hot-water pipes is a very good preventive. I have not seen a speck of mildew in all our large show house this season, which I attribute to this precaution.

One useful way of growing the Chrysanthemum has been omitted—viz., as a table or decorative plant, for which, of course, as ordinarily seen it is entirely unfitted. To this end a few old stumps should be saved after the cuttings have been taken, and planted out in a bed as soon as sharp frosts are past, where they will require little attention. The first week in August cut off the tops 3 or 4 inches long, insert as cuttings, six in a pot, in frame behind a north wall, keep close and moist until rooted, then plunge in bed, allowing plenty of room to prevent drawing until time to house. The bloom being almost formed in the shoots before the cuttings are taken, they will not grow more than a few inches before flowering. Any good habited free blooming varieties will do for this purpose.

I am afraid, though I have left many details untouched, my paper has long surpassed the usual limits, so I will conclude with a few remarks on the novelties which have appeared this season. To begin with the summer bloomers.

Mrs. Burrell, sport from G. Wermig, has proved an acquisition, being a

beautiful delicate creamy yellow in colour, habit identical with Madame Desgrange. Another sport, deeper yellow, has also appeared; the colour, however, is not greatly wanted. Piercy's Seedling, orange yellow, very free and good habit, will do without staking. Alice Butcher, bronze sport from Lyon, very free, the best of its colour. Grace Attick, white Japanese, opening in July. M. Van Hulle, bronze, fimbriated petal, very free.

Mr. Piercy of Forest Hill, though only possessing a garden of very modest proportions, has been doing good work in seedling raising. He finds that if old plants are put out early enough to bloom in July, with a few semi-doubles, as Hartland's Marguerite among them to supply pollen, the bees and flies will cross enough flowers to secure plenty of fertile seed. I saw three extremely promising varieties, at present only under numbers, which will be sent out next year if stock permits.

Of new incurved I have seen nothing worthy remark except the fine bronze sport from Mr. Bunn, H. Shoesmith, which will be a useful addition. The purple sport from Princess of Wales will be acceptable to the exhibitors, but is rather dingy in colour.

There are two or three fine additions to the Anemone class—Madame Robert Owen, grand white; Sabine, pretty primrose yellow; and Nelson, purple, the last being least desirable, being rather coarse.

After the rush of new Japanese the last few years bringing some fine novelties, if much that was inferior, it is disappointing to have very little beside rubbish to chronicle this year. It appears that the Frenchmen having made a market are proceeding, as they did with Roses, to deluge it with utter trash. Of ten of Délaux novelties, which I purchased as the cream of the set, nine are now on the rubbish heap, the exception being Madame Louise Leroy. Of new kinds which have been exhibited the following appear valuable :—

M. Bergman (Délaux).—Style of Mr. Garnar, but richer and deeper in colour.

Magicienne.—Fawn, shaded bronze and yellow.

Etoile de Lyon.—Blush white, shade rosy pink, but rather coarse. An immense flower, but rather coarse.

Vieil Or.—Old Gold, grand flower, after Golden Dragon, but narrower in petal and much fuller flower. Then the finest novelty of the year, Sunflower, bright golden yellow, grand flower, with very long outer petals, which droop gracefully all round in the same manner as in Belle Paule.

In addition to these a number of very promising seedlings, which it would, perhaps, be unwise to particularise until seen in better order, have been imported viâ America. These, though suffering from the effect of the early frost which did so much mischief, appeared to me so promising as to give hopes that we may shortly be independent of the continental raisers, and enabled to give them what they so much need —viz., a year or two's complete leisure from selling to enable them to prove their seedlings instead of delegating that work to us.

WINTER CUCUMBERS.

Those whose task it is to keep up a continuous supply of Cucumbers through the winter months are well aware of the careful treatment the plants require to keep them in a healthy bearing state, and any hints that can be obtained are sure to claim attention and criticism. The cultural notes by Mr. W. H. Ward on page 513, useful as they no doubt are to many, are open to some comment.

In the first instance does Mr. Ward seriously believe that front and top ventilation in December absolutely necessary to insure success? If such is the case I should imagine the climate in his immediate neighbourhood is of exceptional mildness. I think I can lay claim to having been and still being fairly successful in their cultivation, and we never find it necessary to open the ventilators either top or bottom after the first week in November. Our only weakness for a fixed temperature is shown in the endeavour to maintain the temperature as near 60° as possible both day and night through November and from December onwards, raising it 5° or 10° according to circumstances. Should we be favoured with a glimpse of sunshine through these generally dull months growth is stimulated by the rise of temperature, and also consolidated by the additional light. What I consider so prejudicial to healthy fruitful growth is the practice of forcing hard through the dull dark days. Weak attenuated growth is the result of that, and generally the total collapse of the plants before the end of the year. From experience I have come to the conclusion that what I term the "sun bath" is an important item in obtaining fruitful growth, which nothing but the rays of the sun can produce. The practice of giving air is, I consider, open to several objections. We let the previous sun-heated air escape that gives life and energy to the plant and admit in its place a body of cold air. For what purpose? merely to keep the temperature at the precise point prescribed by horticultural faddists. We also promote evaporation and favour the escape of moisture, and consequently induce the attack of red spider, mildew, and other pests.

Why do we ventilate? is a question I have sometimes asked brother craftsmen, and if the answer is more amusing than instructive it is, I suspect, because this simple operation is practised more by rote than by circumstantial requirements. I hold the minimum temperature should be the only fixed one, and this should be ruled by the number of degrees rise that the sun will produce at that particular time of year. For instance, through November, when the maximum temperature desired is 80° or thereabouts, the power of the sun's rays, owing to the obliquity of the earth, can seldom raise the temperature of a plant house more than 20°, so that the minimum of 60° will be found about right. Towards the end of the month and through December the minimum can be raised to meet the still less heating power of the sun, and continue to do so until the turn of the year, even if the temperature should rise to 85° or even 90°, as it will sometimes do in bright frosty weather. When the fires have been kept going sharp to keep up the increased minimum there is no occasion for alarm, much less for opening the ventilators, as owing to the low point of the sun's meridian at this time of the year its influence is of short duration.

After the turn of the year, contrary to what would seem the proper theory—viz., to reduce the minimum according as the sun's power increased, we find that the plants will finish their career creditably towards the end of March under very strong heat, a plentiful supply of moisture, and absolutely no ventilation whatever, and this, with a freedom from mildew and red spider, that advocates of free ventilation appear to suffer from.

One word as to mildew. Mr. Ward appears to believe that its appearance is caused by the excess of atmospheric moisture. How he arrives at this conclusion would, I think be interesting to many who are troubled with this dire pest, though I believe this is a theory that is very popular. I am totally opposed to the idea of a hot moist atmosphere being favourable to its growth, and why this opinion has gained ground I am at a loss to say, unless that the mould engendered by damp organic matter is believed to be in some way connected by a fancied similarity of organism.—M. Coombe.



ANOTHER ROSE BOOK.

Cultural Directions for the Rose, with Descriptions of the Newest and Best Roses in Cultivation adapted to various circumstances and situations, &c. By John Cranston, King's Acre Nurseries, near Hereford. Seventh Edition, revised.

If "in the multitude of counsellors there is wisdom" then ought Rose-growers to be amongst the wisest of the earth; books of all sorts are written for them, and instructions are weekly provided in the various horticultural publications, of which there is certainly no lack. Amongst those who have given to the world the result of their experience is the author of "Cultural Directions for the Rose," which was published thirty years ago, and has now reached its seventh edition. Those who have seen Mr. Cranston's flowers at Rose shows, and, above all, those who have ever visited his nurseries at Hereford, will be fain to acknowledge that no one is better qualified to tell us about the Rose than the popular author of this book, and in this edition he has certainly striven to make more secure his claim to be one of the best instructors we have on the subject of which he writes.

On the subject of stocks there is still a good deal of difference of opinion. The tendency is unquestionably towards the substitution of the Briar for the Manetti. Mr. Cranston is a strong advocate for the latter; he has strong reason to praise it, for it has stood him in good stead in times past; but on such a soil as his we should have supposed that plants on the Briar seedling or Briar cutting would have succeeded best; indeed, the last time that we visited his grounds we noticed large quantities of the seedling Briar were being worked, and it is somewhat remarkable that although other stocks have been from time to time praised up, still the two which Rose-growers mostly know are the Briar in some of its forms and the Manetti.

On the subject of pruning there are some excellent directions given. Although perhaps a little too much stress is laid upon the obtaining of symmetry in the plants, it is easy to give directions, and with the comparatively young plants of a nursery it is more practicable than in private gardens, where plants of four or five years of age will not conform themselves so readily to the operator. Like most Rose-growers

Mr. Cranston advocates pruning in the early spring months, but even on this point he will find people to differ. We met the other day an extensive Rose-grower who advocated the plan with all newly planted Roses of pruning them at the time of planting; this is wise in spring planting, but not in autumn.

There is no subject in connection with the cultivation of the Rose which Mr. Cranston has left untouched in the first part of his book. Names, labels, insects, in fact everything that could by possibility be considered needful for the grower to know has been provided for him by one who knows what he is writing about, and can bring the test of experience to verify his advice.

In the second part of his book Mr. Cranston has given most valuable aid to Rose-growers of all kinds by the selections which he has given of the best Roses, nor has he in this confined himself to such as are suited for exhibition. He has considered the wants of those who dwell in smoky towns and of those who live in cold localities. He has given lists to suit even the smallest growers, of the best six Roses of different colours, the most highly scented Roses, the most brilliant Roses for beds, and, in fact, selections for all kinds of uses to which the Rose can be put, a very copious calendar of operations, for which no one is better qualified. The book concludes with what will be of very great value to rosarians of all kinds, a complete catalogue of Roses. Hitherto this has been only accessible in the carefully compiled catalogue of Ketten frères of Luxembourg, or in the more elaborate "Dictionaire des Roses," and this list, while not so fully descriptive as either of those mentioned, will, nevertheless, be sufficiently so for most English growers. Mr. Cranston does not profess that it is perfect, and, indeed, it is very difficult to make a list which shall be free of mistakes. This difficulty was experienced when the Committee of the National Rose Society compiled their catalogue of a selected number, and is still greater when all the Roses ever sent out are to be included; but there is one series of mistakes which we think Mr. Cranston might have avoided—not giving the names of Roses which have been pronounced so much alike that they are not to be scheduled together; thus there is nothing to show to us that Marguerite Brassac is only another name for Charles Lefebvre, or Alba Rosea for Madame Bravy, yet they have long since been so bracketed; but, notwithstanding, we must hail this list as a very great boon for Rose-growers. Mr. Cranston's description of Roses in his second part is very full, and those who wish to find out the character of any Rose has only to refer to this list to find his wants met.

We have, we hope, said enough to assure the Rose-grower, but especially the beginner, that he may find in Mr. Cranston a wise instructor and safe guide, and that although he may, perhaps, differ from him in some minor points, yet these are inseparable to Rose growing as to most other things. There is no general concensus of opinion in most things, and what is most wanted is the opinion of a sensible and practical man, and that, as we have said, they will find in Mr. Cranston.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 11TH.

SCIENTIFIC COMMITTEE.—Present—Mr. G. Wilson, in the chair; Hon. and Rev. J. T. Boscawen, Professor Church. Dr. Hogg, Dr. Scott, Mr. D. Morris, Mr. J. O'Brien, and Rev. G. Henslow, Hon. Sec.

Oak Wood, Defective.—Specimens of Oak wood, forwarded by Mr. Burbidge, which had been used for spokes of wheels, but found to be remarkably brittle and consequently useless, were submitted to Professor H Marshall Ward for examination and report. The following communication was received from him:—"I have cut numerous sections of the pieces of Oak, and have made a very thorough examination of the wood, but must say I can find no traces of fungi or pronounced decomposition. Nevertheless, the tracheides of the wood seem to be abnormally short, and have occasionally granular 'deposits' in them—also in the medullary ray cells—which I should like to know more about. I cannot explain the matter, but should be glad of further specimens for examination."

Ivy, Staminody of the Pistil.—Mr. Henslow submitted some specimens of abnormal Ivy blossoms to a microscopical examination, which were exhibited at the last meeting by Dr. Masters, together with drawings by Mr. G. W. Smith. The dried condition of the flowers precluded a very exact determination of the abnormality; but there appeared to him to be little doubt but that stamens replaced the carpels. The sepals, petals, and stamens were normal, but above the superior disc—which is normally formed by the upper and exposed part of the carpels—were a crown of supernumerary anthers. The vascular cords which normally represent the dorsal ribs of the carpels bore the anthers. In the centre was a depression in lieu of the ovary cells, and apparently some minute and rudimentary anthers occupying their place. These seemed to be due to staminody of the placental cords, which normally occupy the centre of the inferior ovary.

Stachys tuberifera: Analysis of the Tubers.—Professor Church gave an account of an analysis of the tubers of this new vegetable which he had himself made, and by which he confirmed those of Dr. A. V. Planta, recorded in *Landwirthschaftliche Versuchstationen*, Nos. 5 and 6, 1888. It appears that they contain 78 per cent. of water, 1·5 per cent. of albuminoids, 1·7 per cent of non-albuminoids or amides, 16·6 per cent. of sugars, 0·7 per cent. of fibre, 0·1 per cent. of ash, 0·2 per cent of fat, and a trace only of starch. Comparing this analysis with that of Potatoes, it appears that the water is in larger quantity, it being 75 per cent. in them the flesh-forming albuminoids are rather more than in Potatoes, while the sugars replace the starch, of which there is some 15 per cent. in the average anaysis of the Potato.

Satyrium sp. with "Supertuberation."—Mr. O'Brien exhibited palmate tubers of some South African species, with showed two years' growth, having been plunged in moss only; the tubers, instead of developing a leafy axis, had formed fresh tubers only, the stem and leaves being produced in miniature, being about half an inch in height. Mr. Wilson mentioned the fact that Lilies sometimes behave in the same way, and that the process was identical with "supertuberation" in Potatoes, in which case the "eyes" gave rise to fresh tubers instead of stems, when situated too deep and with too much heat, according to the experience of Mr. Boscawen. Mr. O'Brien remarked that the importance of the knowledge of the above phenomena lay in the fact that it was often supposed that tubers and bulbs were lost or decayed, from the non-appearance of the flowering stems, while they might still be present in the soil, but were for two or three years simply reproducing bulbs at the expense of the old one, without flowering at all.

Lime with Contorted Boughs.—Mr. G. Swailes forwarded a young live tree grown from a layer, the only one of 500 which exhibited the peculiar growth. A graft taken from it in the spring exhibits the same peculiarity. Dr. Hogg remarked that it appeared to resemble the "contorted" variety of the Hawthorn. The curving and twisting was apparent even in many of the minutest twigs. It was thought by some to be due to mischief or injury by insects; but the above facts seem to point to other causes. It was referred to Chiswick to be grown to prove the constancy of the feature or otherwise.

Christia.—This is a new production for antiseptic bandages, invented and patented by Mr. T. Christy, of 25, Lime Street. It is constructed of thin whitey-brown paper, expressly made of Manilla Hemp (Musa textilis), which consists purely of remarkably long liber-fibres, which doubtless tend to give it greater tenacity. It is then subjected to a process with glycerine, olive oil, and other substances, which render it translucent, with the appearance of oiled silk. It subsequently is treated with salicylic acid, carbolic acid, or other disisfectant, and rendered antiseptic. Its advantages are—great tenacity, extreme lightness, being not more than one-third of the weight of oiled silk or gutta-percha sheeting, antiseptic and perfectly impervious to moisture. It was thought that it would prove so exceedingly useful in horticulture—*e.g.*, for binding up in budding, sending specimens by post when the exclusion of air is essential, while strips would be serviceable for tying plants to stakes, &c.

Korsambi Nuts.—Mr. Henslow showed specimens, received from Mr. Christy, of the seeds of Schleichera trijuga, of the order Sapindaceæ. It was supposed to be the source of Macassar oil, but this was strongly doubted. Mr. Morris observed that it is called the "India Oak tree," and is abundant in India and Ceylon, and is valuable for its timber.

Juniperus occidentalis (Hook).—A specimen, collected in Eastern Oregon, U.S.A., by Mr. William Stewart, was forwarded by him from Greenock, N.B. It was first found by Douglass in the Story Islands in the Columbia River. It was also found in the Klamet Mountains, in the Oregon territory, at 5000 feet. It grows from 40 to 80 feet high, and, like other species, varies in foliage in passing from the young to the older stages. The specimen sent was spring-leaved, or in the characteristic condition of the young stage. It is remarkable for the strong and disagreeable odour when bruised—("Gordon's Pinetum," page 163).

Centenary of the Dahlia.—Mr. Henslow called attention to the fact that the year 1889, besides being the centenary of the Chrysanthemum in Europe, was that of the Dahlia in England. It was introduced by the Marchioness of Bute in 1789, and figured with single and double forms in "Bot. Mag.," vol. xliv., t. 1835, and "Bot. Reg.," vol. i., t. 55.

RANUNCULUS CULTURE.

UNQUESTIONABLY one of the most beautiful flowers of spring yet absent from many, if not the majority, of gardens. Formerly collections of named varieties were grown with much care by a few old florists, but these fanciers are now more scarce than growers of florists' Tulips are; indeed the Ranunculus is scarcely grown as a florists' flower, but for decorative purposes, and for market, the cultivation of varieties in mixture is extending. The old florists used to be very particular in choosing suitable positions for their Ranunculus beds, also in the preparation of the soil and planting. Here are the instructions of one of them:—

"SITUATION.—It is only a waste of time and money to attempt to grow the plants within the influence of a smoky atmosphere near large towns, or upon a high hill in a dry soil, or in a swamp. The florist must choose a place for the Ranunculus bed neither too high nor too low; let it be a level surface, and if it be sheltered from the northern blasts so much the better.

"SOIL.—The soil should be retentive of moisture. The best kind is the virgin mould of some alluvial soil on the banks of a river, or some lowland pasture. It should be of a rather close texture, without any small stones or sand amongst it. Lay it up for a year, turn it over until it is well incorporated, wheel out the old soil to the depth of a foot or more, place a thin layer of very rotten cowdung at the bottom, and upon that the fresh soil. If the situation is low, with a wet subsoil, it must be well drained; but if the subsoil is dry there is no necessity for drainage. If

the soil should be thought too poor, a small addition of decayed cowdung will be advisable; but it must be so decomposed as to appear like a black powder. Let it be thoroughly mixed with the soil whilst making the bed, in dry weather, about the month of September.

"PLANTING.—The season for planting is in the early spring, as soon as the most severe frosts have passed and the ground has become tolerably dry. Some time about the end of February or the first week in March, rake the surface of the bed in the morning of the day previous to that fixed upon for planting. Some recommend steeping the roots for twelve hours in water before planting, but we think this not necessary, except the planting season has been from some cause or other put off till the middle of April; then it may be useful. Supposing, then, that the weather is propitious,



FIG. 63.—RANUNCULUSES.

and all things prepared, commence by drawing with a hoe a drill across the end of the bed, 1½ inch deep ; if deeper the roots will be weakened the succeeding year, by forming a kind of stem nearer the surface ; and if shallower, the plants are more liable to be struck with drought. Plant the tubers, if large, 4 inches apart in the row ; if small, 3½ inches will be a sufficient distance, and cover them with fine sand. This will cause the tubers, when they are taken up in July, to come out of the ground quite clean for keeping."

Very precise instructions were also followed in other details of culture ; but it is not as a florist's flower that the Ranunculus is alluded to now, but as an ordinary garden flower that may be grown to give satisfaction by simpler methods of culture than those above described, though the instructions are good. We have found it is not a waste of time and money attempting to grow Ranunculuses near towns, as we have seen brilliant masses of them within two miles of Charing Cross ; and, as to soil, they will grow in such as will grow good Cauliflowers. In respect to the time of planting, some of the most extensive growers of these flowers for market have probably about finished planting their tubers now. They plant in November, onwards, as the ground may be in suitable condition, not deferring the work till spring ; but when severe weather follows, and the tubers have started, being in what is known as the "milky" state, the surface of the ground is covered with litter, as in the condition indicated they are liable to injury by frost ; but when the growth pushes through the ground they are regarded as safe, being quite hardy. When grown on a limited scale in gardens cocoa-nut fibre refuse would answer for protection if litter were considered unsightly. The advantages of late autumn planting consists in the roots taking good and deep hold of the soil, hence the plants better endure dry weather in late spring, which often causes them to wither prematurely when grown from tubers inserted in March. The flowers figured represent ordinary decorative forms, and were grown in a London garden from mixed tubers, which are the reverse of costly. A small leaf-mining insect often injures the plants, the larvæ of a small fly similar to that attacking Celery. Sprinkling with a solution of softsoap with half a wineglassful of petroleum well mixed in each gallon, applying in the evening, not in the morning, is a safe and good deterrent of the attacks.



ROYAL HORTICULTURAL SOCIETY.—We understand that with a view to retrenchment of office expenditure, and with the hope of being able to devote more money to Chiswick, the Council of the Royal Horticultural Society have decided to leave the position of Assistant Secretary vacant for the present. Mr. Chas. J. Grahame, who has so well filled that office during the past year, fully concurs in the propriety of this step, and having the Society's welfare at heart is in entire accord with the Council's decision. The Hon. Sec., the Rev. W. Wilks, has most kindly undertaken to be responsible for all official correspondence, and considering the main objects he has in view—viz., the habilitation of Chiswick and the resuscitation of the Society's Journal, we are sure that he will meet with every indulgence at the hands of Fellows and others, if sometimes he find it impossible to keep the correspondence quite up to date.

—— THE usual monthly dinner and conversazione of the HORTICULTURAL CLUB took place at the Club Rooms, Hotel Windsor, Victoria Street, Westminster. The chair was taken by the Hon. and Rev. J. T. Boscawen, in the absence of Mr. John Lee from illness—an illness from which he is happily making a rapid recovery. There were present—Dr. Hogg, Messrs. Pearson, Lindsell, Denny, Turner, Pearson, &c, The subject for discussion was the Chrysanthemum, being opened by Mr. Charles E. Pearson in an excellent practical paper, which touched upon the various points of culture. An interesting discussion took place, in which the Chairman, Dr. Hogg, and others joined. A vote of thanks was accorded to Mr. Pearson. The paper referred to appears in the present issue of this Journal.

—— THE HORTICULTURAL DIRECTORY AND YEAR BOOK FOR 1889 (published at this office) is now issued in an enlarged and greatly improved form. It comprises some 368 pages, and includes full list of gardens, garden owners, and gardeners in England, Scotland, Ireland, and Wales, nurserymen, and horticultural builders, a much extended list of horticultural societies, and the principal continental and American nurserymen. A useful feature is added in the twelve pages devoted to descriptions of plants certificated by the Royal Horticultural Society from November, 1887, to the corresponding month this year. A series of tables of special service to horticulturists is another addition, and with ordinary calendarial information renders the book a substantial shillingsworth.

—— THE following are the principal arrangements of the ROYAL BOTANIC SOCIETY FOR 1889, but as that year will be the fiftieth anniversary of the Society, a special fête is under consideration and will be duly announced :—Spring Exhibitions, Wednesdays, March 20th, April 10th ; gates open at 2 o'clock. Summer Exhibitions, Wednesdays, May 15th, June 19th ; gates open at 2 o'clock. Evening Fête (probable date), Wednesday, July 3rd ; 8 to 12 P.M. Promenades, Wednesdays in May, June, July, commencing May 8th ; exhibition and fête days excepted. Lectures, Fridays at 4 P.M., May 10th, 17th, 24th, 31st, June 7th, 14th. General Meetings, for election of new Fellows, scientific discussions, &c., Saturdays, at 3.45 P.M., January 12th and 26th, February 9th and 23rd, March 9th and 23rd, April 13th and 27th, May 11th and 25th, June 15th and 29th, July 13th and 27th, November 9th and 23rd, and December 7th. Anniversary, Saturday, August 10th, at 1 P.M.

—— A CAUTION TO NURSERYMEN.—I feel it my duty to ask you to note, for the benefit of nurserymen and seedsmen, to caution them about executing orders from unknown individuals in the neighbourhood of Bristol. A nurseryman saved himself from executing a very large order by paying a personal visit to the place where the goods were to be sent. The address looks well upon paper, and therefore might entrap anyone. I need not say the large order will not be executed, so look out, those in the trade.—ALFRED OUTRAM.

—— IN "A Kitchen Gardener's" paper on "PEAS IN 1888" in the *Journal of Horticulture*, page 536, he speaks of "Lynn's" Black-eyed Marrow Pea (Dicksons) as though it was a variety introduced by one of the firms of Dicksons. It is a very old variety, for I have known it quite thirty years, and is of the type of Knight's Marrow, also old varieties, and it is "Lyne's," not "Lynn's," but I do not know who he was. Dr. Hogg could no doubt tell us, or some of our older London wholesale seedsmen. Like many other old varieties, it has passed almost into oblivion, and I think it is probably grown more in America and the colonies than in England, as I was some years ago connected with a London seed house who used to report it, but we never had it in large quantities.—W. D. S.

[Lynn's (not Lyne's) Wrinkled Marrow Pea was raised forty years or more ago by Mr. Lynn, the fishmonger in Fleet Street, whose shop is still in existence. Having accidentally discovered a few wrinkled Peas with a black eye (hilum) among a sowing of Knight's Dwarf Marrow, he selected them and grew them apart. He brought them to the notice of Messrs. W. & J. Noble, who were at that time seedsmen at 152, Fleet Street, and by them the Black-eyed Marrow was brought into notice. It is a very hardy variety, and used to be grown in the north ; but not being of desirable quality it nearly dropped out of cultivation.]

—— WE are informed that the Committee of the HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY have decided to hold the Show in 1889 on Thursday and Friday, Nov. 14th and 15th.

—— GARDENING APPOINTMENT.—We understand that Mr. G. Merritt, gardener to Lord Dacre, Kimpton Hoo, Welwyn, Herts, will shortly go into business at Harpenden as a florist and market grower, and he will be succeeded by Mr. Charles Martin, foreman at Holker Gardens, Lancashire.

—— CONSIDERABLE quantities of AMERICAN APPLES are now reaching the British markets, and it is said that the Apple crop in Canada and the United States is the largest ever known ; 536,000 barrels have already been shipped to Europe, against about 290,000 during the corresponding months of last year.

—— THE "GARDEN ORACLE" for 1889 prepared by Mr. Shirley Hibberd, and published by Messrs. W. H. & L. Collingridge, is before us, and will be handy for reference during the year by persons engaged in gardening. It contains a concise and excellent monthly calendar of operations, also a good calendar on bees, lists of new plants, fruits, and vegetables, with selections for cultivation, a full chapter on the cultivation of Chrysanthemums, and an extensive catalogue of large flowering varieties.

—— Mr. Franc Gibb Dougall, 167, Canning Street, Glasgow, writes respecting the Glasgow and West of Scotland Horticultural Society :—"I beg to inform you that the flower shows of this Society for 1889 will be held, spring, Wednesday, 27th March, 1889 ; autumn, Wednesday, 4th September, 1889. Both to be held in the City Hall, Candleriggs, Glasgow."

—— A Gardeners' Society for Ealing.—A Society of this character has recently been started at Ealing with every promise of being most successful. The President is E. M. Wilson, Esq., J.P., and the Hon. Secretary is Mr. E. Chadwick, of Hough Hill House Gardens, Ealing. Already three addresses have been delivered, the opening one by Mr. Richard Dean ; one on Ferns, by Mr. A. Wright, The Gardens, Devonhurst, Chiswick, illustrated by microscopes ; and a third by Mr. S. Coulter, on Pruning Fruit Trees. The meetings take place on Thursday evenings, in the Girls' School Room, Ealing Green,

—— In a provincial paper professing to deal with horticultural subjects an extraordinary description is given of the National Chrysanthemum Society's Exhibition at Sheffield recently, in which amongst other strange statements, it is remarked that in the open class for groups of Chrysanthemums arranged for effect there was only one entry, which gained "the first prize of £100." This will be good news for the exhibitor, but he will find it rather difficult to prove his claim. Mr. Parker's address is given as "Droitwich." The paper mentioned is also interesting in other departments, for in an article on the Cactus we find special reference to "Epiphillium Tumicatum," and "Speciossimus Jenkensoni or the Rainbow Cactus."

—— The Big Trees of Australia.—"Is it possible," says a writer in the *Melbourne Leader*, "that the big trees on which we have been priding ourselves have no more foundation in fact than the Australian natives' legends of the bunyip? It has been for years an article of Australian faith that we licked all creation in the way of tall timber, but when a gentleman tries to put it to the test and offers a reward of £20 to anyone who will show him a tree of 400 feet in height, with £3 extra for every 5 feet over, no backwoodsman comes forward to earn the reward. A tree of 500 feet in height would be rather difficult to hide. We either have them in the colony or we have not. And the conclusion that everyone will draw if there is no claimant comes forward to demand such a very easily earned reward is that our Gums are not the M'Kays they were reported to be."

—— An article in the *Nineteenth Century* for December contains an article on the Fruit-Growing Revival by a horticultural editor, and in the introductory remarks the following passage occurs. "In 1886 a panacea for the agricultural distress was announced in the shape of Tobacco growing. 'Raise Tobacco instead of corn,' was the burden of the advice tendered to the bewildered agriculturist struggling in the throes of a bad season ; and poor Agricola, whom his detractors assert is so opposed to innovation, straightway set to work to test whether *Nicotiana affinis* would yield him a better return than corn." It will apparently be news to the writer in question and the editor of the high-class publication in which the above is allowed to appear, to learn that Nicotiana affinis does not afford the Tobacco of commerce, and has never been recommended for culture by agriculturists unless by some wild writer utterly ignorant of the subject with which he attempts to deal.

—— "A Few Hints on Watering Plants" was the title of a most interesting, valuable, and practical essay read before the members of the Paxton Society at the Saw Hotel recently by Mr. L. Twigge, of the firm of Messrs. Twigge & Son, Bradford Road Nursery, St. John's. The President of the Society (Councillor Milnes) occupied the chair, and Mr. Herbert Chapman acted as Vice-Chairman. There was a moderate attendance of the members. Mr. Twigge dealt with the subject in a manner which at once convinced his hearers that he had devoted considerable attention to this important and absolutely necessary process in connection with gardening. He pointed out that many ladies and amateur gardeners frequently kill plants by kindness or over-watering, whilst on the other hand large numbers of plants are lost from neglect or carelessness in respect of want of watering. After an interesting discussion, a hearty vote of thanks was accorded to Mr. Twigge, on the motion of Mr. E. Fenner of Sandal, seconded by Mr. G. Gill of Eastmoor.

—— At a recent meeting of the Manchester Horticultural Society Mr. Gleeson of Clumber Gardens, read a paper on The Pine Apple, and in the course of a discussion which followed, Mr. Bruce Findlay is reported to have made these observations—"They were all aware that Pines have been for the past twenty years imported into this country from the Island of St. Michael. In the year 1868, 471 of these Pines were imported into London, eight years later the number had increased to 35,000, and he would not be far wide of the mark in saying that the number had now reached 100,000 annually imported into this country. The cost of producing and delivering them in London is about 5s. each, and they could now get good Pine Apples at less than 7s. 6d., which a few years ago would have cost two or three guineas each." We should think that the number imported exceeds the total given above, as they are frequently sold in consignments of over 5000 in Covent Garden Market, and we have seen a large portion of the spacious Floral Hall filled with these fruits. Good Pines can also be purchased at a lower rate than that named.

—— At the last meeting of the National Chrysanthemum Society's Floral Committee for the present year, held in the Royal Aquarium, Westminster, recently, there were present E. J. Sanderson, Esq., in the chair, with Messrs. Ballantine, R. Dean, L. Castle, G. Gordon, H. Cannell, G. Addison, Kendall, C. Gibson, Swift, G. Stevens, R. Owen, and Mardlin. Several novelties were exhibited, and first class certificates were awarded for the following varieties. Etoile de Lyon, from Messrs. Cannell & Sons, Swanley, a Japanese variety with large blooms and broad straight florets of a rich crimson colour. It was also shown by Messrs. Laing & Sons, of rather lighter tint. Mrs. W. A. Harris from Mr. Beckett of Elstree, another fine Japanese variety, with full blooms white tinted pink ; Cæsar, from Mr. Elliott of Jersey, a large or Japanese Anemone, ray florets dull red, centre yellow, but it was not in good condition though promising ; Primula sinensis Cannell's Pink, of a very soft clear pink, the flowers well formed and the habit good. Mr Beckett also showed fine blooms of Pelican, and Mr. Mursell of Streatham had extremely handsome examples of Gloriosum, and numerous other varieties were shown of differing merits.

—— A Dangerous Compound.—Mr. Iggulden writes :—"I have often recommended the use of Smith's weed killer for destroying weeds, and have induced others to give it a trial. In one instance unfortunately the introduction of this poisonous mixture has resulted in the death of a Frome child. It appears that about eighteen months ago what was left in a barrel was run out into bottles, and the receptacle returned to the vendor of the weed killer. During the following summer the bottles were supposed to be emptied, and they were then set in an outhouse. In the course of alterations recently commenced a workman brought his child on the place, and he shortly after was taken ill and died. Death was attributed to poison ("arsenate of soda in solution"), and it was ultimately discovered that the poor boy had drank out of one of the supposed empty bottles. According to the evidence of the county analyst, a teaspoonful of the fluid found in the bottles was said to be capable of killing a child that swallowed it. Gardeners who use the weed killer are distinctly informed that it is a poison, but it is doubtful if many of us were aware how really dangerous it is. The fact of its being so need not deter anyone from using it freely, for these weed killers are great economisers of labour, but it ought not to be left about in a careless manner, and certainly not stored in bottles. Neither the gardener nor the manufacturer was blamed for the unfortunate mishap, and I certainly do not impute any blame to anyone. It is what any of us might have done, and I am giving this warning in order to deter others from acting in a careless manner where poisons are concerned."

—— The monthly meeting of the Notts Horticultural and Botanical Society was held at the Arboretum, Nottingham, on Wednesday evening last, December 12th, for the purpose of hearing a number of essays read on "The Duty of the Employer to his Gardener," for which three money prizes had been offered by Mr. Richard Sankey of Bulwell Potteries, Nottingham. Mr. Sankey presided, and amongst a large attendance were Mr. Samuel Thacker, Minever House, Nottingham ; Mr. C. J. Mee, Wollaton Hall Gardens ; Mr. J. S. Belliss, Newstead Abbey Gardens ; Mr. N. H. Pownall, Lenton Hall Gardens ; Mr. R. Waters, Welbeck Gardens ; Mr. J. H. Walker, Hardwick House Gardens ; Mr. J. R. Meadows, Rock House Gardens ; Mr. Geo Wilson, Aspley Hall Gardens ; and Mr. N. Gorman ; Mr. Edward Steward, Secretary. Seven papers were read by Mr. Steward, who consented to undertake the task, and each of these was highly interesting and replete with information and suggestions of a practical character. The whole of the papers had been written with much care, and in most cases with conspicuous ability. The essays were read under their respective *noms de plume*, and the prizes were awarded by ballot, the

result being :—First prize, £1, with the first class certificate of the Society, Mr. J. H. Walker, gardener to John Wesley Lewis, Esq., Hardwick House, Nottingham. Second, 15s., with the second class certificate, Mr. Geo. Wilson, gardener to E. W. Field, Esq., Aspley Hall, Nottingham. Third, 10s., with third class certificate, Mr. G. Camp, Wollaton Hall, Nottingham. The Chairman, in presenting the prizes to the successful competitors, congratulated them upon the excellent manner in which they had dealt with such an important subject, and hoped the various opinions expressed in the essays would be productive of much good. Mr. S. Thacker offered a few encouraging remarks to the unsuccessful competitors, and on the motion of Mr. Walker, seconded by Mr. Wilson, a vote of thanks was passed to the donor of the prizes.

—— The annual dinner of the York Florists' Society took place last Saturday night in the "Old George." The City Sheriff (Councillor Matthews) presided, and had with him at the cross-table the ex-Mayor (Alderman Rymer), the Rev. F. Umpleby, Sir Joseph Terry, the ex-Sheriff (Mr. S. Border), Mr. Cowper, Vice-President of the Society, &c. The Secretary (Mr. Lazenby) occupied the vice-chair. The usual patriotic toasts having been honoured, the Chairman proposed the toast of the evening, which was "Success to the Ancient Society of York Florists, and all Lovers of a Garden." He believed the Society was first established in 1720, and he need not tell them that it had had a somewhat chequered career. If it had not been for a few enthusiastic lovers of flowers it would not have been in existence. The establishment of the Chrysanthemum Show nine years ago had contributed greatly to its strength. Its minor shows, by the kindness of successive Lord Mayors held in the Guildhall, had been of such excellence that they had been thoroughly enjoyed and looked forward to with pleasure by the citizens generally. Mr. Key proposed "The Treasurer," and Mr. Fielding, the gentleman toasted, responded. He was happy to say that the Society was in a good financial position. At the termination of the last year they had a balance of £150; they had been able to maintain their numerical strength. He was not aware, indeed, that they had ever been so strong as they were that day. The annual income by donations, &c., had been £120. The money from the Chrysanthemum Show had not been so large as last season, but they had no great cause of complaint. The amount received was £140, and they would be able to pay their way, with possibly a £10 or £20 to add to their balance. Alderman Sir Joseph Terry next proposed "The Secretary," who understood from his daily avocations what ought to be done, and he was fully equal to the demands made upon him. Mr. Lazenby, in acknowledging the toast, said as they were aware he had from the time of his connection with the Society sought its extension and welfare. Since he joined it had very much increased in strength and usefulness, and was, in his opinion, second to none of its kind. He trusted it would keep on the fair way of prosperity, and that the members would co-operate to that end.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.

(*Concluded from page 402.*)

A somewhat bustling, decidedly not rural, road, from Oxford Street northward, is the Tottenham Court Road. We can hardly picture it to ourselves as it was less than a century ago, when it led to the old manor of Tottenham Court. This name, however, has no connection with the village farther off, but seems to have been originally "Tuthill" or "Tottenhill." The mansion, by turns the property of the Graftons and Southamptons, was on the east side of the road, the fields lying behind it being called the Tottenham Fields. On the west side of the road were the Bedford Fields; both are now the site of streets and squares. In the seventeenth century the manor-house became a tavern and its private grounds a tea-garden. As a reminiscence, when the latter was cut up for building during the reign of George III. the new street there was called Eden Street. This locality is interesting to us, because Abercrombie, the worthy gardener, dates one of his books from Tottenham Court. Having taken a plot upon the estate near the main road, he carried on a nursery for several years bearing this title, until his infirmities obliged him to retire and become the occasional adviser of others. One of his fancies was to compose short pieces of poetry, which he put up here and there in arbours and upon walls, a line of things in which he has not had many successors.

The district of St. Pancras, with Camden and Somers Towns adjacent thereto, is not only bare of venerable trees, but of any memorials of such, and the historian of London suburbs describes it as a bare, unpromising region, chiefly grass land, only here and there a market garden, but the side of one hill was set with fruit trees and trellised Vines. Railways and depôts, also an increase of houses, have so far polluted the air that gardening has become unprofitable, and I recently witnessed the clearing of one of the last plots at Camden Town upon which vegetables had been raised laboriously. As to the railway openings or cuttings, I may remark that some of these might be advantageously planted with trees or shrubs. This has, in a few instances, been done on the south side of London; probably evergreens are preferable to deciduous species. But of lesser open spaces accessible to the public this district is remarkably scant; the only two of consequence are the ground of St. James's Church, Hampstead Road, and the connected grounds of St. Pancras and St. Giles, a little further north. Situate in a populous district, formerly the churchyard of St. James's, is much resorted to, though its extent is but three acres. It presents a peculiarity I have noticed in no other suburban garden, that its asphalted walks are each distinguished by names and geometrically planned. The method is also followed, which is observable elsewhere, of placing in the centre of most of the flower beds some evergreens and herbaceous plants, and outside these a circlet of bedding plants during the summer. When these are removed in autumn, as the centre is not touched the beds do not present that bare appearance which in some of these gardens is unpleasantly noticeable at the winter season. Though the dark December days were setting in, here, as in a few more of our London gardens, the Chrysanthemums along the borders still had some of their blooms unwithered, though tinged with the smoke, and flaccid from heavy rain. The trees, not numerous, in this open space, are comparatively young, and the kind most conspicuous is the Lombardy Poplar, lines of which have been planted in various directions. It is a tree which looks well up to a certain age in the London air, but after a time does not thrive as does the Black Poplar.

The larger ground of St. Pancras church comprises seven acres, and it is sufficient to furnish employment to four gardeners and a foreman. But the picturesqueness of this garden is marred by the circumstance, that as many of the old tombstones have been left, it still retains much of the churchyard look. Curiously suggestive of the link between this district and the iron regions of England are the rockeries placed here and there made up partly of fragments of brickwork and partly of slag. Upon these have been placed a variety of plants, but only such as do not need a constant moisture, for they are dry rockeries. A very abundant plant was the common Moneywort, and the familiar Saxifraga umbrosa (London Pride), suitable, because green all the year round in London. Some of the Heaths are specially suitable for such banks, though they will not always flower. In this ground the trees are not numerous. We find the Weeping Ash and the Willow, some Limes and Elms of moderate growth, and a few twisted Hawthorns. There are many evergreens, scattered, and in clumps. A pretty effect is produced in one part by a circle of Privet formed into a dense hedge, with inter-radiating lines of Thuias, Laurels, and other species. Some Yuccas showed signs of good progress made since they were put in, but, as is not unusual about London, Ferns refuse to grow satisfactorily.

On the slopes north of Oxford Street, formerly Bedford Fields, to which we have already referred, once resorted to by duellists and foot-pads, also visited, it is said, by the City damsels, for the purpose of gathering herbs to be used as cosmetics, there are now squares, occurring frequently, and giving a semi-rural character to the locality. In one instance we have several open spaces in approximation, by the joining of Brunswick and Mecklenburg Squares to the garden of the Foundling Hospital and an old burial ground. Largest of all is Russell Square, with its ten acres, deemed by some the finest square in London. Euston Square contains seven. This is interesting as having been an old nursery garden in the reign of George III. At present these squares are jealously "preserved," but they may some day become popular resorts. Having been formed in comparatively recent times they exhibit few trees of any age. Bloomsbury Square has a tradition of a remarkably graceful and tall Robinia which was cut down in 1800, and was supposed to have been planted by Lord Southampton soon after the Restoration. And the last of some old Pear trees, which had once been in the gardens of Bedford House succumbed to time about thirty years ago. In most respects these squares resemble each other. Elms, Limes, Ashes, and Planes predominate, a few Chestnuts and Birches mingling with these, and the familiar Lilacs and Laburnums, which one expects to see in every London garden of the old style. Such antique favourites amongst the plants as the Iris germanica, the common Golden-rod, and Dianthus barbatus are, however, yielding ground to the newer species. But I should like to see more freely planted about London the Coronillas, Hepaticas, Heliehrysums, Œnotheras, and other species I might enumerate, which will grow with proper management, even in poorish soil, and such as Ailantus glandulosa, Catalpa speciosa,

Sophora japonica, Cerasus sinensis, Halesia tetraptera, and many more of exotic parentage which might adorn our London open spaces.—J. R. S. C.

A NEW VEGETABLE.

In 1887 attention was called in France to a new vegetable, which had been introduced from Japan under the name of Chiro-Gi. It was shown at a meeting of the National Horticultural Society of France by M. Chappelier, and several writers in French periodicals described it as of a very promising character. The botanical name under which it first appeared in publications was Stachys affinis, but the authorities have since decided that it is distinct from the species named, and the appropriate title of Stachys tuberifera is now adopted. In France the popular name of "Crosnes" has become current; in England the name "Spirals" has been suggested as suitable, and now it is catalogued as "the Chinese Artichoke," though Japanese would perhaps have been more suitable.



FIG. 61.—CHIRO-GI.

Specimens were exhibited in December, 1887, before the Fruit Committee of the Royal Horticultural Society, by Mr. A. G. Hookings, gardener to Sir H. Thompson, Moulsey, who has grown it successfully, but it was regarded as little more than a curiosity. Since then it has been tried in the Chiswick Garden, where it has grown and increased with surprising rapidity, and though the tubers are small they afford ample compensation for this in their numbers. The plant is of bushy habit, a foot or more in height, with spreading fibrous roots, bearing the peculiar little tubers, somewhat spiral-like at first glance, but really formed of a series of fleshy rings, largest in the centre, and gradually decreasing to the extremities. They differ much in size, ranging from 1 to 3 inches in length, and averaging about half an inch in diameter, of a consistency resembling Jerusalem Artichokes, and it is said they are principally composed of inulin, the starch substitute found in the latter vegetable, though some have stated that in analysis they give 20 per cent. of starch.

Messrs. J. Carter & Co., High Holborn, exhibited tubers at a meeting of the Royal Horticultural Society's Fruit Committee, on November 13th this year, when the specimens were cooked and tried by the Committee, with the result that they were considered very satisfactory, and a first class certificate was awarded. Consequently the enlarged and handsome catalogue or Vade Mecum of the firm named for the year 1889, which is just issued, announces the plant for distribution as "a new vegetable," and gives an illustration, which we have been kindly permitted to reproduce in fig. 64. With this as with other vegetables much depends upon the way it is cooked and prepared for table. Boiling, steaming, and roasting are recommended, and serving with melted butter; no doubt, however, several modes of preparation will be devised by skilful cooks.

This Stachys is of easy cultivation and ready increase, having proved hardy both in France and this country. A rather finely pulverised fairly rich soil is desirable, in which the roots should be planted a foot apart in rows about double that distance asunder. One important point must be borne in mind—namely, that the tubers do not keep well after they are lifted, so that if removed from the ground they should be stored in some slightly moist material.

An analysis of the tubers of this plant is given at page 562 of this issue.

NOTES FROM A HERTS GARDEN.

Orchids.—We do not attempt the culture of these plants beyond a few in an ordinary stove, in which respect we are in the same category with many others, who admire Orchids yet cannot devote a house or houses solely to them; and though we may not obtain such a wealth of flowers as some, yet there is satisfaction in being able to grow and enjoy the quaint beauty of these most interesting plants in ordinary structures. Although houses specially fitted up for Orchid culture may be desirable, yet the fact remains that many of the most beautiful, free growing, and floriferous, and most generally useful varieties do equally well, and in some instances better, in an ordinary stove, intermediate house, and greenhouse. Indeed, Orchids are as easy to grow as hardwooded plants; all that is wanted is a knowledge of their requirements applied with care and attention. Houses of Odontoglossums, of Cattleyas, Vandas, or Dendrobiums and Cypripediums are certainly attractive, but they lose more than half their charms by lack of suitable association. Have by all means houses to grow the plants in, but to display them place them where they will best enhance the interest and enjoyment of the spectator.

In December we have Cypripedium insigne and C. venustum in flower, which tell well amongst Adiantums, small Palms, and small Dracænas, of the highly coloured varieties, raised plants of Calanthe vestita are graceful, also some Asparagus tenuissimus and A. plumosus nanus, against which is Calanthe Veitchi, with its bright rose flowers and tall gracefully arching spike; a plant of Oncidium flexuosum majus, with a panicle 4 feet high, bearing hundreds of flowers, yellow spotted with brown, whilst the air is filled with the "sweetness" of Zygopetalum Mackayi. All these are common, and are consequently within the reach of everybody.

Hellebores.—The Christmas Roses have been with us since November. Helleborus niger maximus was the first to appear, its large white buds tinged with pink being very pretty; H. altifolius is similar if not identical; H. niger angustifolius has numerous flowers, large, and pure white; H. niger is also coming very strongly, and has abundant buds that will be expanded before the festive season; H. atrorubens is also in flower; its rich reddish purple flowers borne abundantly, contrast finely with the dwarfer form and white flowers of H. niger.

Habrothamnus elegans.—Every greenhouse and conservatory should have a plant of this, which is good either as a pillar or roof plant, and is good also for walls, but it is necessary that it have plenty of light. Grown in a pot it is fine for decorative purposes, flowering in late summer and autumn when flowers are not too plentiful. It is readily increased by cuttings of the half-ripened shoots in July or August, in a close frame either with or without heat, but they root sooner with gentle bottom heat. Repot the plants as the roots extend, not giving large shifts, but keep the plants near the glass to insure sturdy thoroughly solidified growth. Pinch back the growth to a few joints of its base by early February so as to induce a bushy growth, and give the largest pots when the plants have made a few inches of growth, affording liquid manure after the pots are filled with roots. After flowering let them rest awhile, cut the shoots back to two or three joints from the old wood in January, turn them out and remove about a third of the ball when the plants have made an inch or two of fresh growth, and return to the same size of pot, in which they may flower, feeding after the fresh roots have possession of the soil, or they may be shifted into larger pots. Fine plants may be grown in 9 and 10-inch pots. Good loam, with a little leaf soil or well-decayed manure suits these plants, good drainage being essential. The plants must not be watered until it is necessary, but when needed a thorough supply should be afforded.

Planted out in a border of good loam enriched with leaf soil or well-decayed manure and efficiently drained, it grows freely and makes a fine specimen for a wall not shaded, a pillar, or a short roof, planting firmly, as upon the sturdiness of its growth depends the density of its cymes and substance of the flowers. In a loose and siliceous soil it grows freely enough, but the cymes are small and the flowers poor as compared with those of plants grown in a rather strong and firm soil. It may be mulched with short manure or be given surface dressings of

artificials, and in August onward—ours is now (December) in full beauty—its numerous dense terminal heads of bright purple-red flowers make a display that cannot be readily surpassed. When fully grown it merely requires spurring in in early spring, young plants being shortened to firm wood so as to insure the needful growths for furnishing the space.

APONOGETON DISTACHYON.—During the mild weather of November and early December this very ornamental and free flowering aquatic was in fine flower in tanks outdoors, the flowers being remarkably strong and eight expanded ones on a plant, with a quantity of buds showing, but it cannot stand frost, a few degrees irreparably damaging the flowers. It is, however, perfectly hardy in 18 inches depth of water, seeding and increasing freely by that means and offsets. Indoors it flowers through the winter, and does not require a large area nor a great deal of soil; in fact, a vessel 2 feet across and a foot to 18 inches deep with 3 or 4 inches depth of soil, loam, and leaf soil or cow manure will accommodate a strong specimen, and it is the strong plants that give the large flowers from September through the winter. It requires plenty of light and air. Its white bracts and delicious Hawthorn-like perfume render it very desirable as a winter flowering plant for the greenhouse. Though it flowers under favourable conditions nearly all the year round, yet in warm situations it flowers most freely in autumn, whilst in the more breezy and colder situations the flowering is in early summer.

AQUATICS FOR TABLE DECORATION.—What is so charming as an oval glass bowl 2 feet in length, 18 inches in width, and 3 or 4 inches deep, filled with clear water and Nymphæa alba foliage and flowers as a centre? Intersperse with these the rosy-pink variety N. alba rosea, and raise outside all round to the level of the dish or a little higher with green or fresh sphagnum in which are plants of Sundew (Drosera rotundifolia), or failing those any small bog plants foliage and flowers in green moss. Lesser bowls may be used for N. odorata and its charming variety rosea, pale pink. Smaller dishes may be used for the corners, and for a long table up the centre. If plants are used let them be such as Cyperus and Isolepis. Aponogeton distachyon in small dishes with its own foliage, floating leaves, is about the only available winter plant, but in summer there are more to choose from. Villarsia nymphæoides leaves and its flowering sprays are pretty.

ROSE MADAME FALCOT.—Mentioning table decorations reminds me of this Rose so charming in buds which are now produced freely by a specimen planted out in a conservatory and trained at the end of a stove which adjoins. It is freely exposed to light, as there are no climbers overhead in that part; in fact, the Rose reaches to the roof, and is suffered to grow rather informally, which adds to its appearance and to the freer production of its lovely buds.—UTILITARIAN.

REVIEW OF BOOK.

The Practice of Forestry. By CHRISTOPHER Y. MICHIE. William Blackwood & Sons, Edinburgh and London.

MR. MICHIE, the forester of Cullen, the seat of the Earl of Seafield in Banffshire, has had great experience on the subject on which he writes, and this handy book will be serviceable to many who are interested in tree planting and management. The author, with the object of adding to the usefulness of the work, does not exclude from its pages the experience of others, duly crediting them with their productions. We are going to follow his example, for a citation will answer some questions that have reached us, and the information will be acceptable to many.

After showing that land estimated at 15s. per acre as poor pasture when planted with trees will over a term of years yield a net annual income of £4 10s. an acre Mr. Robert E. Brown says:—

"Five years ago I received the management of about 400 acres of plantations on the estate of Wass in the north of England. The estate was owned by a thoroughly enlightened gentleman, who was anxious to have the woods put into good condition. During the last five years we have endeavoured to improve the woods properly, and the result is the improvement of the plantations to an amount fully twice the value they were at first, after taking from them a regular income, in the shape of thinnings, every year. These plantations have been giving an average yearly income since 1861 of £2 10s. per acre net, and similar land on the estate is let with difficulty at 10s. per acre.

"One instance, in particular, will show the increase of value of woods when under a regular course of thinning. A wood, consisting of a crop of Oak and Ash, extending to 100 acres, was valued in 1864 by several foresters and timber merchants at £4000; since then thinnings have been taken from it to the amount of nearly £2000, and in the present year (1866) I am offered £5000 for the standing crop.

"I consider thinnings of very little value before the plantation reaches the age of fifteen years—all that is required up to this time is a careful going over, cutting out any dead wood, and relieving any healthy tree that requires it. I believe that most of our woods at the present day are ruined by overthinning—the result, first of the want of trained men; or second, where experienced men are employed on an estate, the term of their management is so uncertain that they aim more at having a good balance in their favour at the end of the year than securing the ultimate success of the plantation. I strongly recommend that no healthy tree be cut until it has attained a marketable value. The great aim of forestry should be to secure the highest possible return from the ground, and nothing adds more to this than length of scantling. Length is the principal object, and can only be attained by preserving a closeness of trees on the acre. When I say a closeness of trees, I do not mean that one tree should interfere with another, knowing that the two things most essential to the growth of trees are root and branches. Quality, nowadays, is subordinate to quantity, and there is a danger of placing too high an estimate on the value of thinnings and too little on the crop remaining for the final cutting. The final cutting should never be less than eighty trees per acre if Larch, and nearly two-thirds more if Scots Fir."

"Supposing that 2500 Larches and 1500 Scots Firs have been planted per acre, the thinnings might realise as follows:—

First thinning, at fifteen years—			
Larches, 600, at 2d.		£5	0 0
Scots, 300, at 1d.		1	5 3
900		£6	5 0
Cost of cutting, 3s. 6d. per 100		1	11 6
		£4	13 6
Second thinning, at eighteen years—			
Larches, 300, at 3d.		£3	15 0
Scots, 200, at 2d.		1	13 4
500		£5	8 4
Cost of cutting, 4s. per 100		1	0 0
		£4	8 4
Third thinning at twenty-two years—			
Larches, 500, at 6d.		£12	10 0
Scots, 300, at 3d.		3	15 0
800		£16	5 0
Cost of cutting, 6s. 6d. per 100		2	12 0
		£13	13 0
Fourth thinning, at twenty-six years—			
Larches, 500, at 1s.		£25	0 0
Scots, 200, at 6d.		5	0 0
700		£30	0 0
Cost of cutting, 8s. per 100		2	16 0
		£27	4 0

Which gives for the four thinnings an expenditure of £7 19s. 6d., and an income of £57 18s. 4d. There will remain 600 Larches and 500 Scots Firs, or 1100 trees; but allowing for 300 failures and removals during the first fifteen years, there are still 800 per acre. This is the number of trees I begin with as the real crop to operate upon, which I consider very near the right quantity."

Our experience in the cultivation of Larch is corroborative; some plantations proved so satisfactory that much sandy land devoted to farming was planted a few years ago, and from the present time onwards the annual sales will realise sums fully justifying the change of culture. What was known as "bad" land on the estate has proved more profitable occupied with Larch over a term of thirty years than has the best land under tillage let at rents varying from 30s. to £2 an acre. There can be scarcely any doubt that there are thousands of acres of almost worthless, because neglected, plantations in this country which might be rendered profitable by judicious planting and management. This is an important subject, and not the less so since purchasers of English timber tell us it is almost certain to become dearer in the future than it has been in the past.

Intending planters may consult Mr. Michie's works with advantage, as he gives information founded on long practice on almost every point connected with the subject.

PRUNING EVERGREENS.

A FEW notes on the subject of cutting-in evergreens of various kinds may be useful to those about to operate on these ornamental features of a garden or landscape, and especially on large full-grown specimens which have not previously been subjected to much cutting-in. As this is the class most difficult to manage well it will be necessary to consider the condition and nature of the plant before we commence too rashly to use the knife, axe, and saw.

Very little consideration will convince us that an evergreen of

large size cannot be entirely cut down without inflicting on it great injury, and possibly the operation may kill it ; but although a total deprivation of foliage may be fatal, the removal of one-half or even more of it may not be so : consequently, when a large Laurel or other shrub has so far outgrown itself as to be no longer ornamental, becoming naked at the bottom, or otherwise unsightly, partial cutting-down is essential to appearance, and when it can be so managed as to leave some of the lower branches well clothed with foliage the energies of the plant soon repair the disaster. Perhaps of the shrubs which show most conspicuously the utility—nay, almost necessity of this plan—the Arbutus is as good an example as any. The part that was left may also be cut away in about two years afterwards. Phillyrea, Laurustinus, and some other shrubs generally succeed well under this treatment, the common Laurel especially so, and the Portugal Laurel does as well when thus treated as in any other way, but it is a plant rather impatient of cutting-in, although in every other respect amongst the hardiest we have.

Perhaps the best time for cutting-in such evergreens may not be that adopted by us, but as it answers very well, and is attended with some advantages, there seems to be no objection to it. The beginning of April is the season at which we usually do such work. However well the cutting may be accomplished there cannot be any difference of opinion about the plant operated on looking badly for a time ; and, as it is advisable to reduce that period to the shortest possible space by not cutting the plants until shortly before they will continue to grow again, they are not long in a naked condition. I do not, however, affirm that they are any better when left till April. For the reason already given, observe in all cases where possible to retain some branches with leaves on, even if such branches have to be bent to the ground to hide their unsightliness. After the rest of the plant has grown for a year or so these old branches may be cut off if necessary.

Laurel and other hedges of a formal and regular character ought to be cut with the knife, especially shrubs with large leaves, like the Laurel ; but when this cannot be done the shears may be employed. In the latter case it is best to cut the common Laurel, and I believe most other shrubs of a similar description, early in June, just before the growth is completed, so that a second crop of short shoots may be formed. This takes off the appearance of close raw cutting and hides the deformity caused by cut leaves. For many years we have been in the habit of adopting this plan, and it is rarely indeed that the second shoot does not ripen itself, and it is seldom more than 3 or 4 inches long. Any longer or unsightly shoots may be cut out with the knife before winter, so as to allow of the hedge, bank, or whatever is cut looking uniform during the winter. Judiciously done, taking off sprays for Christmas decoration does no harm to the shrubs.

Choice evergreens against walls may be treated differently, as their flowering is of consequence as well as their appearance. The common Ivy when growing luxuriantly requires trimming ; excepting in special cases we have found a severe cutting-in about the end of July, so as not to show a single leaf, resulted in the production in a month or six weeks of new foliage, which remained good all winter. When the Ivy is not so robust it is better, perhaps, to cut it in at the end of March. There is then a greater certainty of its doing well afterwards ; but if it grow vigorously it will have projected a long way from the wall by the end of summer, and some cutting-in with the knife may be necessary in autumn. For this reason I prefer summer cutting as furnishing a more lengthened period of trimness.—C. E.

FRUIT CULTURE IN CALIFORNIA.

It is now generally recognised that California is one of the most favoured countries for extensive fruit culture, and much has been published bearing on the subject. The quarterly report of the San Jose Board of Trade, however, just to hand contains so many particulars of an interesting character that we venture to reproduce some extracts. The report specially deals with Santa Clara County, which is thus described :—

"The county of Santa Clara has an area of rather less than one million acres. Of this about 250,000 acres is valley—the ancient lake bed, or the alluvial deposits of existing streams ; 300,000 acres is rolling hills and mountain slopes, well adapted to fruit ; the residue, valuable principally for pasturage. While the general contour presented by the valley is that of a level plain, it is in fact a series of gentle undulations, with marked variations in the quality of the soil. In what is now, or has recently been, the lower portions of this plain, the soil is a black, tenacious clay, known as "adobe." It is very fertile and productive, but requires much care as to the time and manner of cultivating it, and is well adapted to hay and grain. The higher lands of the valley are a light loamy, and sometimes gravelly soil. This is easily cultivated, and is well adapted to all the cereals and to most varieties of fruit. In the vicinity of the Bay there are many thousand acres of salt marsh. No effort worthy the name has been made to reclaim them, though the task would seem a not difficult one. It is safe to predict that at no distant day these lands will be reclaimed, and among the most productive and valuable in the county. The warm belt is a tract upon the slopes of the hills that environ the valley. It has an altitude of from 2 to 800 feet. It is generally—and in some localities wholly—free from frost. In this belt, to the east of Milpitas, Potatoes, Peas, &c., are grown through the whole winter for the San Francisco market. Upon the Los Gatos and Guadaloupe rivers are some hundreds of acres, formerly dense Willow thickets, but now in the highest stage of cultivation. These lands are regarded as the most desirable in the valley. The soil is a sedimentary deposit, easily cultivated, requiring but little irrigation, and producing every variety of fruit and vegetable. Thirty miles south of San Jose is the town of Gilroy. The soil of the valley is here fertile and productive. Over a considerable portion the subterranean moisture maintains the growing pastures throughout the year, and some of the most successful dairies in the State are here established. The more elevated parts of the valley and the slopes of the hills are well adapted to fruits and Vines. The summers of Gilroy are warmer and drier than in San Jose. The cool winds from the Bay are materially softened as they sweep down the valley, and the differences of temperature between the day and night are not so marked. The air is mild and balmy, and the nights agreeably cool and pleasant.

"The watercourses within the county greatly diminish, when they do not wholly disappear, in the summer. Sinking as they approach the valley, they augment the subterranean resources which supply the artesian wells. These are found all over the valley. They are usually from 60 to 100 feet in depth, though some find a larger and more permanent supply at a much greater depth. The water is raised by windmills into tanks, and is ample for household and gardening purposes. About Alviso, and near the Bay, hundreds of acres of Strawberries and of vegetable gardens are irrigated from these wells, and the water rises to the surface with such force that the most massive appliances are required to restrain the flow."

Very elaborate tables of temperature are given, from which it appears that the mean for the year is 57°, the highest temperature registered having been 93° in September and the lowest in April, 28°, the average rainfall being about 9 inches in the year.

Turning the chapter on fruit culture we have the following particulars :—

"The basis of the past, present, and future prosperity of Santa Clara County is its agricultural resources. These resources depend on the fertility of the soil and congeniality of the climate. The experience of years demonstrates that the soil contains all the elements essential to plant growth, while the climate is of a character that insures the perfect maturity and ripening of its products. Before the American occupation stock raising was the principal business of the valley, and immense herds were fed on the nutritious grasses that grew spontaneously everywhere, in the valleys, foot hills, and mountains. With the American came the grain-growing industry, and the rich soil, the deposit of centuries, yielded crops almost beyond belief. Many instances are on record where immense fields have produced a hundred sacks of Wheat to the acre, each sack containing from 110 to 135 lbs., equal to an average of about 200 bushels to the acre. These crops were grown year after year with a superficial cultivation that reached scarcely 4 inches under the surface, while all below that was undisturbed and its fertilising elements untouched. The roots of the plants lay near the surface, and the yield of grain was not unfrequently diminished and sometimes totally destroyed by drought ; but so great was the fertility of the soil that if a fair crop could be obtained once in three years it was a fortune to the farmer. Even now, with fair cultivation the Wheat fields yield from 30 to 50 bushels per acre, while the cost of planting and harvesting is only about 60 per cent. of what it is in the Eastern States. But the era of growing grain for profit in this county has passed, and the great Santa Clara Valley and the foot hills and mountains surrounding it has met its destiny in the fruit and Vine industry.

"An acre of ground that formerly produced from twenty to thirty dollars now brings a net profit of from 150 to 500 dollars. The history of horticulture in Santa Clara County is some excuse for this misunderstanding. The first considerable rush of immigration to California was caused by the discovery of gold. The people came to mine and not to plant. They were consumers of agricultural products, not producers. Everything that could be eaten sold at enormous prices. A few Apples that were imported sold from one to three dollars each. Some people of horticultural instincts saw in this circumstance a road to wealth. They planted orchards, and made money. Others caught on to the idea and planted more orchards. These trees came into bearing before there were people enough in the State to consume the fruit. There was no way to get it to market, and consequently no sale. It was a clear case of overproduction. Many orchards were neglected and allowed to perish, others were dug up ; but a few were maintained. The effect of this speculation was to impress the minds of many that fruit-growing in California was a dangerous experiment, and this impression still lingers in the minds of some of the old timers, who cannot understand the changed conditions which this country has experienced in the last thirty years. Then we were isolated from the world ; we grew but few varieties of fruit—principally Apples and Pears—and our market consisted of the handful of people who lived within our limits. Now we have rapid transportation to all parts of the world ; we grow all the desirable fruits known to horticulture ; we have learned to grow them to a perfection attained nowhere else on the globe, and to cure them so that while retaining all their flavour they are practically imperishable.

(To be continued.)



FRUIT FORCING.

Peaches and Nectarines.—*Early-forced House.*—The buds of these trees are swelling freely ; 45° should be the minimum temperature on cold nights, between that and 50° being ample even on mild nights, with a rise of 10° to 15° by day from sun heat. Nothing is gained by undue haste until we have increased light and length of days. Peach blossoms allowed to unfold in a low temperature, particularly at night, with free ventilation, always set and the fruit stone well. Good crops will in a higher temperature, by which means time lost at the commencement is redeemed, the trees make strong short-jointed wood, and with due attention to thinning long remain profitable. Large crops of Peaches are only the forerunners of disaster, as Peach trees, like other fruit trees, are only capable of maturing a given quantity or weight of fruit, and if overcropped they do not exceed that weight in the aggregate, consequently the extra quantity is obtained at the expense of size and quality. Cease syringing as soon as the flowers open, but maintain a genial condition of the atmosphere by damping in the morning and afternoon of fine days. Raise the temperature early in the day to 50°, and not exceeding 55° from fire heat, and admit a little air, yet not to lower the temperature below 50°, and increase the ventilation with sun heat, having it full at 65°, and gradually reduce it with the declining heat, closing for the day at 55°. A little ventilation should be provided constantly at the top of the house.

Successional Crops.—Where there are three or more Peach houses annually forced the second should be started not later than January 1st ; or where the early varieties such as Alexander obtain, and Hales' Early are grown, with Royal George for succession, this may be the earliest forced house in which fruit can with certainty be had in May of Alexander, followed by the others named in June without having recourse to hard forcing. If the house has been open to receive the autumnal rains the borders may be in good condition—that is, thoroughly moist to the drainage ; but if there is any doubt about this an examination should be made, and if necessary repeated soakings given, so as to thoroughly moisten the soil in every part, and if the trees are weakly liquid manure may be given. It has been a prevailing practice to allow the inside borders to become dry through the autumn and early winter months, but it is a mistake that is often followed by the buds falling, and the disaster is frequently attributed to every cause but the right one. With the borders of suitable material resting on ample drainage there is little danger of their receiving too much water either by exposure to the autumn rains or by giving liberal supplies from the tanks. Fire heat will not be necessary for the first fortnight except for excluding frost, and the house should be freely ventilated when the temperature reaches 50°.

Later Houses.—The cleansing of the houses and trees should be proceeded with as opportunity offer. Where the trees have been infested with insects, such as red spider, scale, and brown aphis, it is desirable to syringe them before untying with a solution of softsoap, 2 ozs. to the gallon of water and 1 oz. of soda to 4 gallons, adding a wineglassful of petroleum ; the solution to be kept mixed whilst it is being applied to the trees and house, which should be done thoroughly, wetting every part. When dry the whole may be syringed with water at a temperature of 140° to 150°. The trees will then be very bright, and the cleaning of the woodwork with soap and water and the glass with clear water facilitated. The walls should be lime-washed, and the loose surface soil removed, adding rather lumpy loam with some steamed bonemeal or other approved fertiliser. This will stimulate the surface roots and encourage active feeders by the time the blossoms are expanding. Prior to this the trees will have been pruned and re-arranged and tied to the trellis. If the roof lights are fixed, ventilation should be given fully, the trees being afforded rest as complete as possible, care being taken not to allow them to become dry at the roots. If the roof lights are moveable, and have been removed, they may remain off until the time arrives for starting the trees or until the buds commence swelling, when the sashes must of necessity be replaced to insure the safety of the buds and blossoms.

Unheated Houses.—We have hitherto been in the habit of withdrawing the roof lights as soon as the leaves had fallen ; but this year, owing to the cold season, the wood is not so ripe nor the bloom buds so plentiful or so well developed as to render it advisable in our opinion to remove them. Therefore we shall keep the lights over the trees, and moderate the ventilation by day when the sun in bright, so as to induce the hardening of the wood, and ventilate freely at night and in mild weather to promote evaporation and increase the firmness of the wood. By maintaining a dry atmosphere it is anticipated the wood will not be injured by frost, as might be the case were the trees fully exposed. Trees in this state rarely have the bloom buds sufficiently advanced as to cause anxiety of their falling when the trees are kept somewhat drier at the roots than under ordinary circumstances would be inexpedient. Besides dread of the wood and buds not being sufficiently ripened to set and develope the fruit satisfactorily, there is cause to apprehend mildew, which attends immature wood—*i.e.*, the growths that proceed from it and is the chief cause of blistered leaves. To still further assist the tree-ripening the wood we have had them dug round and the strongest roots detached at one-third the distance from the stem the trees cover of trellis, so that by reducing the supply of sap the wood will not be so gorged on a sunny day as to be liable to injury from frost in severe weather.

THE FLOWER GARDEN.

Keeping Bedding Plants.—A long spell of mild damp weather often causes the loss of more bedding plants than is the case frequently in frosty weather. Especially difficult to keep are the Zonal Pelargoniums in boxes, pans, and large pots, stored in cold or but little heated pits and houses. Damp is the worst evil to contend with, and in order to counteract it all should be kept as dry as possible, given good room as well as plenty of ventilation, and have all decaying leaves removed from them. Fire heat accompanied by night and day ventilation dries and hardens the growth, prevents damp, and renders the plants less liable to be injured by frosts. Lobelias, young Ageratums, Heliotropes, and Verbenas ought not to be kept very dry at the roots, and these keep well on the shelves of a greenhouse or near the glass in other slightly heated structures. Alternantheras, Coleuses, and Iresines ought to be stored on shelves in the plant, stove or forcing houses, and not kept dry at the roots. The greenhouse shelves or stages are most suitable positions for choice succulents, and these must be kept dry. Give Calceolarias, Violas, Gazanias and other bedding plants in frames all the air possible, the aim being to check weakly growth. Plenty of dry litter and mats ought to be in readiness for covering the frames and pits whenever severe frosts are imminent.

Early Chrysanthemums.—Only the earliest or summer flowering varieties gave a good display this season, the successional and late flowering being much crippled by frosts in October. Most of the latter are usually also flowered in pots, and in this case sufficient stock plants are kept to afford cuttings both for pot and open air culture. The summer and early autumn flowering varieties, which include La Petite Marie, St. Mary, Mrs. Cullingford, Fiberta, Frederick Pélé, Madame Piceol, Mdlle. Jolivart, Précocité, Yellow Petite Marie, Alexandre Dufour, and La Vierge, are not so generally grown in pots as they deserve to be ; unless, therefore, a few strong plants of each are lifted and either potted or stored in frames surrounded by common soil, and lightly protected from severe frosts, the stock may be lost. All are fairly hardy, but in cold wet soils especially they are liable to perish, and in any case the slugs are apt to eat every young shoot that appears. Lifting and storing as advised, either in pits, frames, or cool houses, is the surest method of preserving them, but if this is not practicable the least that can be done is to well mound up each plant with coal ashes, this protecting from frosts and slugs. It is advisable to strike cuttings every spring, young plants giving better results than old stools.

Roses.—In open weather the work of planting these may continue. Those that have long been in one position are much benefited either by a change of site or by being replanted in fresh soil. Many of those well established on their own roots may frequently be divided with advantage, this being the readiest method of increasing the stock of Souvenir de la Malmaison and such serviceable varieties. Plant rather firmly, stake if needed, and mulch with strawy manure. Standard Roses are the first to succumb to frost, and strange to say the Briar stems are the most vital part of the plants. In very unfavourable districts, or where extra severe frosts are experienced, it is frequently necessary to bandage the stems with hay, straw, or bracken, and the large or principal stems of Maréchal Niel and other choice climbing Roses need similar protection even in districts where Roses are considered quite hardy. Owing to the exceptional mild weather that has long prevailed Roses are still active, and are therefore more liable to injury than usual. Snow is a capital protection to dwarf bushes, but this is not always present when most wanted, and those who value their beds or single bushes ought to have plenty of strawy litter or bracken in readiness for protecting them. Sufficient of this should, when a severe frost is threatened, be loosely distributed among the plants so as to cover them to the points where the young shoots will be pruned next spring.

Work in the Pleasure Ground.—The late autumn months have been most favourable to the work of levelling and re-turfing lawns, as well as thinning old or forming new shrubberies. When this has to be delayed till the spring cold drying winds are apt to injure the roots, and also cause the foliage of evergreens to flag badly, and if transplanting Hollies is excepted, it is better for various reasons to push on the alterations and tree moving now than have to do it in the spring, when so much other work requires attention. Collect a large heap of leaves and store either above ground or in pits, and when duly converted into leaf soil this will prove of the greatest service for mixing with either planting or potting soil. It is also advisable to turn over the heap of sweepings, road trimmings, lawn grass, and other rubbish that has accumulated, and if the sticks are thrown out and burnt, and the ashes returned to the heap, a valuable compost will be the result.

KITCHEN GARDEN.

The weather throughout the autumn and until recently has been much in favour of vegetable crops. Cauliflowers have been very plentiful, and just before the frost came we stored ten dozen heads, which will tide us over the next two or three weeks. Broccoli would perhaps be the usual term to apply to these, as the variety which has been doing such good service is Veitch's Autumn Self-protecting Broccoli, but it is so

like a Cauliflower in its beautiful white heads that this name is appropriate.

SOWING PEAS IN AUTUMN.—Some growers sow a few rows of Peas in autumn, but these are by no means the majority or so numerous as they ought to be, as autumn-sown Peas if properly treated will furnish pods before any sown in spring. If sown at this time they invariably grow robustly and remain strong and healthy during the spring months. We have tried them in all the weeks from the 1st of November until the last of December, and always sow some in the week including the shortest day. Only the earliest round-seeded sorts should be sown now. The position must be sunny and sheltered, but not too much confined. Cold strong winds are more injurious to them than severe frost. We prefer sowing on a south or south-east border, the rows not being closer than 10 feet apart, as it is important that the sun in the early summer should reach all parts of the rows. We rarely manure a whole border or quarter for Peas, but dig a quantity of manure in where each row is to be sown, and after digging the drills are opened for the seed with a drag hoe. These are not made so wide as in summer, as the young plants do better when close together than when thin and far apart. Make the drill 4 inches deep ; and after sowing the seed put 3 inches of soil on the top, and finish with 2 inches of finely sifted ashes. These make an excellent surfacing, as they do not retain the moisture about the young plants like soil, and they also guard them very well from snails. Should the soil be moist at sowing time do not tread it, but as soon as it is dry tread it down each side of the row, as Peas grow much better in firm than in loose soil.

BROAD BEANS.—These should also be sown now, large-podded varieties being avoided at present. They will succeed in a colder and heavier soil than the Peas, but shelter and sun are highly beneficial to them. Sow the seeds at the same depth as the Peas, and not more than 2 inches apart. Mice are very fond of Broad Beans, and care must be taken from the first that they do not injure the seed.

HOTBEDS.—In a week or two hence the forcing of Carrots, Radishes, Potatoes, &c., will demand attention, and hotbeds afford excellent means of growing them. These early crops are invaluable. Material, therefore, must be collected at once, and may consist of tree leaves and littery manure from stable or cowshed. Vegetable refuse, if fresh, may also be employed, but reject half-decayed matter, as it will not retain the heat for long. Throw the whole into a large heap to ferment, and to allow the excessive heat and moisture to escape, turning the material every alternate day for a fortnight, when it will be in good condition to make into beds that will retain warmth for three or four months.

HORSERADISH.—This is not a leading crop, and yet it is almost indispensable, but a small plantation is generally sufficient for an ordinary supply, and this may be secured without much expense. We are never very anxious to have Horseradish of extraordinary thickness. Roots an inch or two thick suffice, and are easily produced. The best way of transplanting is to dig the whole of it up, select a number of straight young roots for replanting, and lay all the others under the soil in an odd corner for use as required. In replanting dig the soil to a depth of 15 inches, adding a quantity of manure if necessary, and replant by making holes with a dibble and dropping the thong-like roots in. The crowns should nearly be level with the surface, allowing a space of 2 feet between the rows and 15 inches between the plants.

STORED ROOTS.—These are not keeping well. Onions, which appeared matured, are sprouting, so are Potatoes in sheds, and all should be examined.

PLANT HOUSES.

Chrysanthemums.—Intending growers of large blooms should insert cuttings without delay. They will root freely in sandy soil in a cold frame, or better still in a frame or under handlights in a cool house from which frost is excluded. For this purpose select sturdy cuttings that have sprung from the base. We prefer inserting the cuttings singly in small pots and then standing them in a frame or under handlights. Water liberally after insertion, and if the lights are kept close the cuttings will not be long before they are rooted. Directly they are rooted gradually harden them to a cool temperature.

French and Fancy Pelargoniums.—Be careful not to give these too much water or their foliage will become spotted. On the other hand, do not allow the soil to become dust dry. Keep the atmosphere of the house as dry as possible without the aid of fire heat. This can be accomplished by having a little fire heat on fine days, when the structure can be ventilated liberally. Maintain a temperature of 45° at night, which will be ample to keep the earliest plants advancing slowly, and if they are advanced near to the glass the growth they make will be sturdy. Aphides are very likely to attack the plants at this stage of their growth. If they are observed fumigate the house slightly with tobacco.

Cyclamens.—If these are not coming into flower as quickly as desired place them on a shelf near to the glass in a temperature of 50° to 55°. Under these conditions they will quickly push up their flowers. Ventilate on all favourable occasions to prevent the foliage drawing. Young plants that were pricked into pans and boxes two months ago may now be potted singly into 2-inch pots. Encourage a slow but sturdy growth in a temperature of 50°. When young plants are grown on in brisk heat they become drawn and seldom do well afterwards. Prick out seedlings into pans or boxes. To succeed with Cyclamens never allow the soil to become dry from the time the seed is sown until after the plants have flowered.

Hydrangeas.—Where these were rooted in small pots and have been kept in them until now they can be placed in 5-inch pots as opportunities offer. Those rooted from plants that failed to flower early in the season will have enjoyed a good rest, and may be started into growth directly they have been potted. A vinery, Peach house, or Rose house just started is a capital place for them. In potting be careful to leave the bud above the surface of the soil. This season we are potting in every case where practicable as low as possible ; the pots will be filled up after the flower is visible. This will insure good foliage down to the rim, and will assist the blooms wonderfully when developing. Use for a compost good fibry loam, one-seventh decayed manure, and a little sand.

Lilium candidum.—Where these were potted as early in the season as bulbs could be obtained, and have since been in cold frames, they can now be removed to a light airy structure where the temperature will range about 45°. Undue forcing must be avoided, but under the conditions advised the flower stems will soon be visible. Allow them to come forward steadily ; if hurried they will fail to flower. Watch for aphides, and destroy them at once if they appear on the plants. As growth advances supply water liberally.

THE BEE-KEEPER.

NOTES ON BEES.

CANDY FOR BEES.

EVER since this Journal first announced the advantages of feeding bees with barley sugar, volumes have been written upon the subject, and candy, in consequence of its less liability to deliquesce than the former, has been substituted. A reader of this Journal, "W. H. C. D.," sends the following recipe for feeding neglected bees :—"I have made several cakes of candy for the bees, simply by damping granulated sugar with water, putting it in a shallow box, and setting it near the fire to harden into a cake ; it answers splendidly, and this is much easier than boiling, and no risk of burning." The above plan seems much better than the common candy, as there is no waste of sugar by the bees, nor through the change brought on by boiling. Then the "shallow boxes with a moveable lid to fall in as the bees take the sugar is ingenious and good. The same writer also states that he has a large surplus of honey from all his hives, made and managed according to instructions given in this Journal, but not an ounce from the ten-framed standard size of the British Bee-keepers' Association, and wisely adds that in a good year honey may be had from any hive ; but in a bad season it can only be had from hives such as has been recommended in these pages, and proves conclusively what is the best hive."

RAISES UNDERNEATH HIVES.

At page 549 I incidentally mentioned the uses and the antiquity of these raises, and in a former article showed that the system was being tried in this country as an entirely new one. I have also shown how numerous old ideas has been appropriated by others of the modern class, and how the Americans have of late been only advancing for the first time these old ideas. Singular to say, "Gleanings," that came by the same post as the Journal, contains a description and drawing of a raise as new, exactly the same as has been in use hereabouts from time immemorial ; and yet we read in the same "Gleanings" that they, the Americans, were the most advanced bee-keepers in the world. If America is not more fatal to bees than our country is during winter I cannot endorse such statements, for until bee-keepers know how to preserve at least ninety out of every hundred of their hives during winter they are far behind. If all would give the ventilating floor a fair trial, many hives that are allowed to perish during winter or smothered during summer's heat, would be preserved alive.

GLASS SECTIONS.

I have no less than a score of letters asking my opinion of these as well as many others on different subjects, most of which I have, through pressure of work, been unable to answer, but will do so at the first convenience, so trust this explanation will be a sufficient apology.

I can scarcely give a proper estimate of these Hallamshire sections. The fact is that many having attempted the making of these and failed, myself amongst the number, and all the more credit is due to "A Hallamshire Bee-keeper" for his plan and success in being the first to produce a filled glass section. I bought a bottle of cement with the intention of making glass sections. It was warranted to hold and bind everything together; but alas! "vain are the hopes." My first trial with the cement was with two united pieces of glass in my pocket giving way while in my vest pocket. I have often thought, however, of bending pieces of glass, by heating them at first in a furnace and bending them on a heated square of iron, but never put it to a good trial. Doubtless glass, although it may not be generally used, will, as of yore, continue to be used by many bee-keepers as attractive specimens of honeycomb, and I feel certain that when "A Hallamshire Bee-keeper" announces his intentions of revealing his plan of making glass sections, and many will be grateful to him for the desired information.

Glass both above and below supers has been used for upwards of a century, and Messrs. Neighbour carried it so far as to introduce all glass hives, probably the first to do so with hives not unicomb ones; but although glass has been so used, and for so long, "A Hallamshire Bee-keeper's" idea is the latest one, while those who are now trying to appropriate the idea as being first in the field to use glass as sections or part thereof, are but copyists after all.

HOW TO WORK SUPERS.

It is of far greater importance to know thoroughly how to understand the working of supers or sections than to quibble over this or that material. In my last article some hints were given, but not all. Sections or supers divided into compartments do not yield the same amount of comb as those do of one compartment only—*i.e.*, when any number of supers can be placed on the hive as one, each bee getting access to every part. Sections suspended to a bar gives this advantage, and many others, while they do not obstruct the entrance of the bees. Small supers which I have already spoken of, and which may be had from 4d. to 7d. per dozen for material, ought to have a portion of the underside inside sides of about half an inch removed with a cutting guage (these can be attached after they are filled), this need only be done to those of the bottom tier, which is sufficient for the purpose. These small supers are made to hold from 2 to 5 lbs. each, and are easier managed and cheaper than sections, and require less expense decorating for the market, which, owing to the increase of bee-keepers and honey, is rapidly becoming of less value, which does not justify unnecessary outlay in decorating, as is commonly practised with sections. I am of opinion that it is a mistake to encourage honey producers to be at so much expense in preparing sections for market, such as glazing, decorating with paper, and packing cases for single sections. If such is necessary, it ought to be done by the retailer. Honeycomb when of good quality is its best decoration, and it requires no other. The only thing absolutely necessary is to have the sections or supers as clean as possible, and if this economical way of putting honeycomb on the market does not suit, then it may be safely said that bee-keeping for profit is a failure. "Are bees worth keeping in this country with so changeable a climate?" will be answered in another article by—

A Lanarkshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

Stansfield Bros., Southport.—*Illustrated Catalogue of Alpine and Hardy Perennials.*

Sutton & Sons, Reading.—*Amateurs' Guide in Horticulture in 1889 (Illustrated with Coloured Plates).*

Carter & Co., 237 and 238, High Holborn, London.—*Seed Catalogue, 1889 (Illustrated with Coloured Plates).*

H. & G. Sharpe, Wisbech.—*List of Seed Potatoes.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*Horace*).—If you write to Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N., we think he will be able to supply what you require. (*D. S.*).—The sixth edition of "Mushrooms for the Million" is in the press.

White Sport from Chrysanthemum La Nymphe (*J. M.*).—We should think the variety will prove a useful one for decorative purposes, either grown for cutting or as a specimen plant, but the bloom does not appear to possess sufficient substance for exhibition.

Violets in Winter (*T. S.*).—Plant rooted runners or suckers in April or early in May, in good rich soil a foot apart every way, water well after planting, and in dry weather, keeping clear of runners and weeds; and at the close of September move to frames placed in a dry sheltered situation, and sunny, planting so as to be not more than 9 inches from the glass. The lights to be kept off day and night until frost, and then kept on the frames without air when frost prevails, but whenever the weather is mild air to be given day and night in proportion to the coldness or mildness of the weather. Remove all decaying leaves as they appear, and do not plant closer than 9 inches apart.

Peach Trees for Forcing (*Anxious*).—The shoots you send are very weak and the buds advanced, but growth may be retarded till the time you name. A degree or two of frost would do no harm, and no firing should be resorted to except for first excluding frost, ventilating free should the weather be mild. The faulty kernels are either due to defective fertilisation or the lack of calcareous matter in the soil, if not both. If the wood sent is a fair sample, we should not expect the trees to continue bearing satisfactorily much longer unless better root action in encouraged in fresh and good soil. You will find much good information on the management of Peach trees and forcing in the "Work for the Week" columns of the present issue. There is no scale on the shoots sent, and any on the older wood can be destroyed with Gishurst compound or a softsoap solution with a little petroleum added, applying with a brush.

Forcing Asparagus and Potatoes in Frames (*C. W. W.*)—You will need to make up a bed of well-sweetened dung and leaves about 3 feet high, well beaten down, and putting on the frame in about a week, when the heat will have risen; and when it declines to a temperature of 75° it may have soil put on 6 inches thick, and when this is quite warmed through put in the Asparagus plants quite closely together, with soil carefully placed about the roots, and between each layer of plants, the crowns not covered deeper than 2 inches, and the distance from the glass should be 12 inches. The temperature of the bed should not be allowed to decline below 65°, but be kept up by linings, and protected with mats over the lights, so as to maintain in the frame a temperature of 55° to 65°. In about a fortnight the shoots of the Asparagus will be fit to cut. The mats in mild weather after the shoots are 4 inches long should be removed by day, so as to give colour and flavour. The Potatoes to be planted in the bed in rows 15 inches apart, and 1 foot apart in the rows, and 4 inches deep, employing sets previously sprouted an inch long. It is well if the sets are not planted until the heat at 4 inches deep has declined to 70°, and it should be kept up to 65° by linings, protecting from frost by mats over the lights, giving air after the haulm appears whenever the weather is mild. The main point to be aimed at is a steady growth. Avoid overheating.

Raising Plants from Seed for Rockwork (*M. R. S.*)—Alyssum saxatile compactum, Antennaria dioica minor, Arabis alpina, Aubrietia græca, A. purpurea grandiflora, Campanula carpatica, C. carpatica alba, Dianthus neglectus, Erinus alpinus, Saxifraga aizoon minor, S. Cymbalaria, S. longifolia, Silene caucasica, S. Schafta, and Veronica saxatilis and V. prostrata are suitable. Seed should be sown in April in pots or pans well drained, and filled with a compost of turfy loam and sandy peat in equal proportions, with a fourth each of leaf soil and silver sand, the compost sifted, and the surface of the pots or pans made very fine and smooth, and well watered, standing for a few hours, then water again, and when the water has soaked in scatter the seed evenly over the

surface and just cover it with very fine soil. The pots or pans should be placed in a sheltered position, and so that the sun does not fall upon them from 8 A.M. to 5 P.M., or shade from the sun for that period, the main point being to keep moist without having to resort to frequent waterings. When the young plants are large enough prick them out about an inch apart in pans prepared as for the seedlings, treating them similarly, and before they become crowded plant in the rockwork, shading until established. Seeds of rock plants are not in given kinds always procurable, hence we advise you to procure a collection of half a dozen or a dozen kinds as you may wish, stipulating for good free-growing hardy kinds.

Shrubs and Plants for Shaded Border (*S. S.*).—The best of all is the Aucuba japonica, then Tree Box, Butcher's Broom, Evergreen Privet, common Laurel, common Holly, and English Yew, with St. John's Wort and Periwinkle as undergrowth, also Ivy. If the ground is not very much occupied with roots, and is dry, Rhododendron ponticum succeeds fairly, and in some instances we have found Laurustinus do well. Plants for the border may be Alyssum saxatile compactum, Anemone apennina, A. japonica, A. nemorosa flore-pleno, Arabis albida and var. variegata, Aubrietia deltoidea grandiflora, Caltha palustris flore-pleno, Campanula aggregata, C. rapunculoides, Convallaria polygonatum, C, majalis var., Delphinium Belladonna, Funkia undulata variegata, Helleborus niger, Muscari amethystina, Hypericum calycinum, Iris germanica, Myosotis dissitiflora, Nepeta Mussini, Pæonia albiflora var., P. officinalis vars., Primula acaulis vars., Pulmonaria angustifolia, P. officinalis, Spiræa filipendula plena, S. japonica, S. palmata, Dielytra spectabilis, Trollius europæus, T. napellifolius, Viola cucullata, and Violets in variety. The border, we presume, is not overhung, but only shaded by the trees. Ferns that would do are Osmunda regalis well supplied with moisture, Lastrea Filix-mas, L. dilatata, and vars. of both; cristata; Athyrium Filix-fœmina in vars., Onoclea sensibilis, Polypodium vulgare, Polystichum angulare vars., P. aculcatum, Struthiopteris germanica, and Scolopendrium vulgare vars.

Calceolarias Failing (*E. Evans*).—We entirely disagree with you as to the disease being occasioned by inserting the cuttings in cold frames—an opinion that has been expressed before. We remember the time when Calceolaria cuttings were invariably inserted in pans, struck, and wintered in an airy greenhouse. There was then the Calceolaria disease, and it has only shown itself more of late years from the greater number grown. It is many years since Mr. Fish first propounded the practice of wintering Calceolarias in cold frames. It is a practice we have followed with the best results. Our method is very simple. We make ready a place in a sheltered open situation, putting a few inches of lime riddlings on the ground and ram quite hard. Worms do not come through that, and we then set the frames on bricks laid flat. Coarse gravel is then placed all over the bottom to the depth of 3 inches, and next an inch or two of coarse compost, and 3 or 4 inches of finer, which consists of two-thirds loam and one-third leaf mould, and then from 1½ to 2 inches of rather coarse sand. The cuttings are inserted 1½ inch apart every way, a good watering being given. Ashes are placed against the sides of the frame all round, plenty of air is given in mild winter, and protection is afforded from frost. Early in March if the weather is not frosty the points of the cuttings are pinched out, and in the beginning of April we make trenches as for Celery, only 4 feet wide, with 3-feet alleys between them, and put in plenty of well-decayed manure and leaf mould, mixing these materials well with the soil. The plants are planted in rows across the beds, 6 inches apart from row to row, and 8 inches from plant to plant. A good watering is applied, and then water is given sparingly for a time until the plants are growing freely, when abundance is afforded. They are protected from frost by old lights or mats resting on spars placed across the trenches. The first week in May the plants are again stopped, and we have dwarf bushy plants that rarely fail to flourish in deep rich soil.

Hollies (*E. Dawson*).—The varieties best adapted for different forms are prepared both as pyramids, bushes, standards, and weepers. You will have no difficulty in procuring what you want from a nursery where evergreens are well grown. Still, the following remarks from a practical cultivator may perhaps be suggestive:—Pyramids.—It is the natural habit of most varieties of Holly to form a pyramidal form, in which character they are very pleasing as single specimens; but a little assistance is sometimes requisite in training the leader upright and cutting in the other portions to secure the desired shape. With a very little manipulation of this kind splendid trees may be had from 20 to 25 feet in height of all the robust growing kinds. Perhaps the variety known as Hodginsi is one of the best and most rapid growers for this purpose. It has also bold and handsome foliage of deep glossy green 3 to 4 inches in length, deeply but tolerably regularly spined. The Golden, Bronze, and Silver Queens, Gold and Silver Milkmaids, Angustifolium flavum (yellow berried), Doddintonense, Handsworthianum, laurifolium, Madeiriense, and ovata are all suited for making good specimens. Bush specimens will include all varieties that are of a dwarf dense habit. The most notable of all Hollies for this purpose is Waterer's; plants of this splendid hardy and compact rich golden Holly generally grow into dwarf dense bushes without any assistance whatever; shrubs not more than 4 to 6 feet in height will often measure 13 and 14 feet in circumference. The leaves are medium-sized, oblong, smooth, and almost spineless, with a marginal band of deep golden yellow—altogether a very distinct variety, and ought to be in the most limited collections. Ferox (the Hedgehog Holly), and its varieties foliis argenteis and aureis are also very suitable for bush specimens. Weepers.—These are worked on clear stems of various heights. Some few varieties possess a natural weeping habit, the branches in a few years bending down to the ground and make most elegant specimens. A weeping variety of the common green form is very robust in growth and handsome when worked after this manner. Perry's Weeping is beautifully variegated, and is altogether a most attractive variety, as is also the new Golden Weeping. Standards.—Compact, round, well-balanced heads on clean straight stems from 3 to 6 feet in height can be easily obtained of nearly every variety in cultivation; but the Golden and Silver Queen varieties, as well as some of the choice green-foliaged varieties, are most generally grown in this form. The heads are regularly and methodically trimmed in, and specimens are produced well adapted for a winter garden of evergreens.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A Reader*).—1, Sericographis Ghiesbreghtiana; 2 and 3, insufficient without flowers; 4, Justicia flavicoma; 5, Cyperus alternifolius; 6, Imantophyllum miniatum. (*J. M.*).—Maxillaria picta. (*J. L. R.*).—Specimens too imperfect, except 4, which is Coccoloba platyclada. (*M. S. T.*).—A good variety of Cypripedium insigne, very little inferior to Maulei. (*W. M. M.*).—The flower differs slightly from Mdlle. Mélanie Fabre as ordinarily seen, but we believe it is that variety.

COVENT GARDEN MARKET.—DECEMBER 19TH.

No alteration. All classes of goods well supplied.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Lemons, case	10	0	to	15	0
,, Nova Scotia and Canada, per barrel	10	0		19	0	Oranges, per 100	4	0		9	0
Cherries, ½ sieve	0	0		0	0	Peaches, dozen	0	0		0	0
Cobs, 100 lbs.	100	0		0	0	Pears, dozen	1	0		2	6
Grapes, per lb.	0	9		3	0	Plums, ½-sieve	0	0		0	0
						St. Michael Pines, each	3	0		3	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	0	10		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt.	0	0		0	0
Broccoli, bundle	0	0		0	0	Onions, bunch	0	3		0	0
Bruesels Sprouts, ½ sieve	1	6		2	6	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100	0	0		0	0	Potatoes, per cwt.	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		8	0
Cauliflowers, dozen	1	0		2	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsify, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, each	0	3		0	4	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.		s	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Margnerites, 12 bunches	2	0	to	6	0
Arum Lilies, 12 blooms	4	0		8	0	Mignonette, 12 bunches	2	0		4	0
Asters, dozen bunches	0	0		9	0	Narcissus (Paper White), 12 sprays	1	0		1	6
Azalea, 12 sprays	0	9		1	0	,, (French) bunch	0	3		0	6
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms	3	0		4	0	,, scarlet, 12 trusses	6	0		9	0
Carnations, 12 blooms	1	0		2	0	Poinsettia, dozen blooms	4	0		6	0
Chrysanthemums, 12 bl.	1	0		3	0	Primroses, doz. bunches	1	0		2	0
,, 12 bchs.	4	0		12	0	Roses, Red, 12 blooms	1	0		2	0
Cyclamen, dozen blooms	0	4		0	9	,, (indoor), dozen	1	0		1	6
Dahlias, 12 bunches	0	0		0	0	,, Tea, dozen	1	0		3	0
Encharis, dozen	3	0		6	0	,, yellow	3	0		6	0
Gardenias, 12 blooms	4	0		9	0	Stephanotis, 12 sprays	9	0		12	0
Hyacinths (Roman), doz. sprays	1	0		1	6	Tropæolum, 12 bunches	1	0		2	0
Lapageria, 12 blooms	1	0		2	6	Tuberoses, 12 blooms	1	0		2	0
Lilac, White (French), per bunch	6	0		7	0	Violets, 12 bunches	1	0		1	6
Lilium longiflorum, 12 blooms	4	0		6	0	,, Parme (French), per bunch	3	6		5	0
Lily of the Valley, 12 sprays	1	6		4	0	,, (French) bunch	1	6		2	0
						Wallflowers, doz. bunches	4	0		6	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Evergreens, in var., dozen	6	0	to	24	0
Arum Lilies, per dozen	12	0		18	0	Ferns, in variety, dozen	4	0		18	0
Arbor vitæ (golden) dozen	12	0		24	0	Ficus elastica, each	1	6		7	0
Asters, 12 pots	0	0		0	0	Foliage plants, var., each	2	0		10	0
Begonias, various, per doz.	4	0		9	0	Hyacinths, per dozen	9	0		12	0
Chrysanthemum, doz.	4	0		9	0	Hyacinths (Roman), doz.	9	0		12	0
large, doz.	15	0		24	0	Lilium, various, doz. pots	0	0		0	0
Coleus, dozen	0	0		0	0	Marguerite Daisy, dozen	6	0		12	0
Cyclamen, dozen pots	9	0		18	0	Mignonette, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0	Myrtles, dozen	6	0		12	0
Dracenæ viridis, doz.	12	0		24	0	Palms, in var., each	2	6		21	0
Erica hyemalis, doz.	12	0		24	0	Pelargoniums, scarlet, 12	6	0		9	0
,, gracilis, doz.	9	0		12	0	Poinsettia, per dozen	10	0		15	0
,, various, doz.	8	0		18	0	Primula, per doz.	4	0		6	0
Euonymus, var., dozen	6	0		18	0	Solanums, doz.	9	0		15	0



SHEEP MANAGEMENT.

In the preparation of the lambing fold care is taken to select as dry and sheltered a place as can be had. It is not often that farmers are so fortunate as to have a lambing yard enclosed by a wall or boarded fence with due provision of shedding and cribs, but there are many homesteads where a yard might be spared for the purpose, and it is always advisable, for the flock is then more immediately under the master's eye, and a lot of contrivances for shelter can be put up or made better in a yard than elsewhere. Given only an enclosure we can easily contrive snug cribs with hurdles thatched with straw, which answer admirably for the roofs as well as the sides. There must be plenty of single cribs, and three or four little yards, each having its shed or crib large enough to take in six or a dozen ewes with their lambs. Ewes that have suffered from straining or with delicate lambs require keeping apart for a few days in a sort of hospital yard for special attention and nourishment. Last lambing season we mentioned having seen a line of waggons laden with straw across the middle of a lambing yard with thatched hurdles placed along on one side against the waggon wheels, and thus affording shelter for sheep and lambs turned out in the yard. The lambing yard or fold should be near some good pasture for ewes before lambing and for ewes with lambs to go out upon as the lambs become strong enough. But the lambs must never be subjected to exposure to cold cutting wind even by day, and for the first few weeks they should always be taken into the folds by night. We have known dozens of lambs to be lost simply through exposure, which might easily be avoided, and we know no more lamentable sight in farming than that of a lot of starveling ewes with weak lambs turn out upon bare open pasture without shelter of any sort. Such an example of mismanagement may appear strained and far-fetched, but we saw it last season greatly to our regret.

There is nothing more interesting or pleasant to behold in farming than a well arranged lambing fold. On every hand we have evidence of energetic care and thoughtful attention to every want of the sheep. A fine fall of lambs is the crown of a year of careful management, and a little boastfulness or conceit on the part of the shepherd may well be pardoned, for very much depends upon his care of the sheep, not simply during the lambing, but always. As the ewes become heavy with lamb they are kept as quiet as possible, any sudden change or alarm causing abortion, and sometimes the loss of both ewe and lamb. Last lambing season the most valuable flock in our neighbourhood sustained serious harm by being driven out of the fold at night by some poachers' dogs—a sort of mongrel lurcher—of powerful build and great speed, and therefore able to do much harm to the sheep. We mention this to put beginners on the alert, the knowledge gained of such cases of mischief being part of dear bought experience.

During the lambing notice must be taken of all bad cases, and all ewes marked for drafting and fattening later on that prove unfit for breeding. Have at hand some carbolic oil and a syringe for use in cases of severe straining, first washing the vagina with warm water, and one or two applications of the oil slightly warm usually give instant relief and saves the ewe. Ewes suffering much from straining should not be retained for another season, nor should any having protrusion of the uterus. This may be cured temporarily, but the ewe is subsequently unfit for breeding. Far better is it to withdraw and fatten even doubtful animals than to run the risk of loss next season. This is one of the reasons we have for preference to home-bred ewes. We know them from infancy, and save only the robust for the ewe flock, but purchased ewes may or may not be safe; the buyer has to take his chance of that, and there are generally some losses.

Foot rot in a ewe flock is a thing we much deplore. It invariably becomes worse during the lambing, for it is unsafe to cast the pregnant ewes to trim and dress the feet, and it is sad work when a ewe heavy with lamb becomes very lame. It makes a hurtful tax upon the frame, and the lambs soon become lame too, for the disease is very contagious. There is no real cure for it. We may, and do heal bad feet by paring, washing, and dressing with Gell's ointment, but if once a flock gets the taint of foot rot it is always liable to an outbreak. The feet of any lame ewes have attention in a day or two after the lambing, all over-grown or broken parts of hoof being pared off carefully with a sharp knife, the foot well washed with tepid water, and the ointment well rubbed into the sore part. Very bad cases are poulticed with linseed meal, or bandaged with ointment or rags to keep the sore part from contact with the ground.

WORK ON THE HOME FARM.

Till within the last few days the weather was so mild that grass continued growing freely, and if only snow keeps off we shall have plenty for the ewes for the next month or two. This abundance of grass proves so nourishing that we did not begin using corn so early as usual for the ewes, but they must now have crushed Oats regularly. We have been able to keep the hoggets in Turnip folds with very little change, and they are in thriving condition. Turnips are so abundant this winter that farmers are offering them free to flockmasters if only they will send sheep to consume them on the land. This is not as it ought to be. The season has been most favourable to the development of a full crop of roots, yet farmers of slender means have no sheep, nor can they afford to purchase them to consume a crop for which they pay so dear. Surely this is one more lesson of the folly of farming with insufficient capital. Far better, say we, to farm a little and farm well. The risk would be less, the profit more assured, and farmers again be prosperous. We miss no chance of urging this upon general attention, and mention of it is not out of place even in our farmwork note.

Sales of farm produce still take up much time. We have this week realised £90 for pigs, and find our plan of turning inferior Barley into pork answers very well. We avoid all waste, and by using only home grown food there are no corn bills to meet, and the margin of profit is very satisfactory. We can mark no improvement in the corn trade. Our sales for the week amount to 250 quarters, the highest price for Barley being 28s., and for Wheat 36s. This is a fine sample of white Wheat, very fine, dry, and hard, yet the price falls from below that of the best foreign Wheat, the quotations for which varied as high as 45s. per quarter last Monday. If only we could obtain 40s. we should rest content, but it is only for old home-grown Wheat that such prices are given, and it is only a favoured few who can afford to wait for them. As Wheat is threshed the straw is carefully stacked and thatched, most of it being intended for sale eventually, only enough being kept for thatching hay and corn stacks next season. There is a brisk demand for straw, and we have no difficulty in selling all we have at fair prices.

OUR LETTER BOX.

Cabbage-slicing Implement (*C. L. C.*).—A Bullock Turnip cutter would answer your purpose best. We have never seen a Cabbage cutting machine, nor do we think such an implement at all necessary, sheep as well as cattle being able to consume the Cabbages perfectly well without any cutting.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. December.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature In sun.	IN THE DAY. Radiation Temperature On grass	Rain.
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 9	30 248	36 1	35 8	N.W.	45.0	44.3	34 2	54.1	28.4	—
Monday..... 10	30.350	29.1	29 1	N.W.	42 8	39.1	27 5	57.9	22 1	—
Tuesday 11	30.316	31 0	31.0	E.	40 7	41.0	27.1	41.1	20 4	—
Wednesday.. 12	30 369	33.3	32.3	E.	39.9	39.6	29 9	48.7	24.2	—
Thursday 13	30 369	31 8	3 .2	S.E.	38 9	35 8	28 2	42.1	19.2	—
Friday 14	30.281	35.2	35.1	S.E.	38.1	38.7	27.6	38.7	20.1	—
Saturday 15	30.407	31 7	31.7	N.	37 8	40 3	29.3	45.5	30.3	—
	30 334	32.6	32.3		40.5	39.8	29.1	46.9	23.2	—

REMARKS.

9th.—Fair and generally bright day.
10th.—Very cold dense fog early, gradually cleared, and bright sun from 11.30.
11th.—Dense fog, clearing gradually all day, fine evening and night.
12th.—Slight fog early, fine bright day.
13th.—Fine and generally bright.
14th.—Fog all day.
15th.—Fog all day.

A cold, foggy, and rainless week. Temperature about 11° below that of the preceding week, and nearly 6° below the average.—G. J. SYMONS.

THE CLOSING YEAR.

BEFORE these notes see the light in the pages of the Journal Christmas will have come and gone, and the shadows of the year will be casting their fading forms around us, the Journal itself will have finished another year of its long and successful course, and many will be looking forward hopefully to the future. Christmas is the joy of the young: to the old, perhaps, the saddest period of the year. We recall insensibly the Christmases we have passed, the Christmases of joyous and innocent childhood, and the happy ones of a later period when our home was unbroken. But now each year has brought with it the severing of many ties! Dear ones are scattered over Earth's wide surface, and we ourselves are waiting for the time when our place will be empty. But I do not want to cast a shadow over our retrospect, although I rather think it would be in accordance with the character of the year, so far as we regard it in a horticultural aspect, for rarely, I suppose, have gardeners experienced a more gloomy and disappointing time. Absence of sunlight puts all things out of course. Everything was three weeks or a month behindhand; fruits and vegetables alike lacked flavour, and then when we were looking for a fine autumn there came to us, in many places, on October 3rd, a "chilling frost," which crippled many of our flowers, turned our Dahlias black, crippled our Zinnias, stripped our Fig trees bare, and generally made a wreck of everything. Had it not been for this one night our gardens would have been indeed a joy to us, as my friend Mr. Ewbank's seems to have been to him on the favoured Island, where, as I have been told, it does not matter whether you put in a plant bottom upwards, for it is sure to grow and assert itself. Herbaceous plants stood it best, but even with many of them it was a race for life.

I think the first thoughts of a writer at the present time will be for the medium through which those thoughts have been made known, and I think that we are ready thankfully to greet our revered "Boss" that he has so successfully steered his vessel through another year. He has enlisted new recruits, and with the able assistance that he has, I think we may regard the onward progress of the Journal as well assured.

Turning from this our thoughts recur to the great central heart of horticulture in England, the Royal Horticultural Society; and here again we have cause for much thankfulness. Although it has not been able to shake off that old man of the mountain, "the Charter," yet by a judicious alteration of bye-laws much of its burden has been removed, and much has been done to revive an interest in it and make it what it ought to be, the representative of horticulture in England. It is unfortunate in the place in which it holds its fortnightly meetings, and Chiswick is not and never can be what it was. We all think the Superintendent is the right man in the right place, but it is more and more surrounded by houses, yet as a representative garden it is valuable. We have now a working Council, an admirable Hon. Secretary, and we can look upon its proceedings with hopefulness and not with suspicion, and we sigh and think if such had been its character some five and twenty years ago what a different position it would have been in now. There is no use in crying over spilt milk, and so we must all not only wish it well but work for it.

I do not think that the past year has brought before us anything very remarkable in the floral world. The love (or shall we call it the rage) for Orchids still continues, and especially has it developed itself in the genus Cypripedium. This is to my mind (it may be ignorance) a very strange plant affection. Neither in form nor beauty of colouring can it as a class compare with many others—with the soft and lovely colours of the Cattleyas and Lælias, with the varied and graceful forms of the Odontoglossums or Dendrobiums. And yet what remarkable prices have been given for these queer-shaped flowers! They have, I suppose, a special charm for orchidists; but as one of the outside mob I think it is one of the last that I should be enslaved by. Nor have we in the other departments of horticulture seen anything very remarkable. It may be, as we say, there's nothing in the papers, because we are expecting some great and startling news to greet us, so we want in these sensational days something very extra to excite our satiated appetites. In florists' flowers it has been a disappointing season; everything was late, and this affected our exhibitions. Auriculas made but an indifferent figure at the Drill Hall, while Carnations and Picotees were lamentably deficient. Roses everywhere middling, deficient in number and lacking in quality; Dahlias late and not up to the mark; Gladiolus very late, many of them not flowering at all; and even of the hardy Chrysanthemum many complaints of damping off and being very late.

As to fruit and vegetables, as I have said, they have lacked flavour, and the absurd desire to get big things is, I think, taking the flavour out of some of our most cherished vegetables. Peas, for instance. I do not care to have Peas as big as a Broad Bean and nearly as mealy. The size is dearly purchased at the expense of quality, and we shall have to hark back to the Peas of twenty years ago if growers are not more careful on this point. Then, again, Brussels Sprouts: we have them now, the delight of gardeners, who, as a rule, adore size, whose Deity is rather Juno than Venus, but strong in comparison with what one used to grow as "imported Sprouts," and to which we shall have, perhaps, to return. What is the use of a Broccoli that will fill a bushel basket, or a Potato as large as a cannon ball? The same thing runs all through. I see the flavour of a Tomato taken little into account, although it is a very essential point when they are used in one of the best forms as a salad. In mentioning vegetables one must say a word about the new "Crosnes du Japon," or Stachys, of which much has been said. My own experience of it is not very favourable, but tastes differ, and perhaps when we learn a little better how it may be cooked we may like it more.

A great impetus has been given to fruit-growing, and many schemes have been started to favour it. By all means let gentlemen and farmers increase their fruit-growing, but it should be remembered they must wait eight or ten years before they can make much profit. That some better way of disposing of the fruit is needful there can be, I think, no denial. What think you of 1s. 6d. for a half sieve of good Doyenné du Comice and Beurré Clairgeau Pears? Is not that fruit-growing with a profit with a vengeance? and yet that is what I was assured by a friend the other day, was all that he obtained in Covent Garden. There is apparently a "fruit-ring" which requires to be broken. There has been nothing very startling in novelties. Noble is a good addition to our early Strawberries, Emile d'Heyst to our Pears, and Bismarck, Beauty of Bath, and Lady Sudeley to our Apples. In Grapes there is nothing new to record, and Black Hamburgh and Muscat of Alexandria still hold their pre-eminence as the two best Grapes for general cultivation.

We have not to record any great losses amongst the personnel of the horticultural world. Some have, of course, been taken away, but they occupied no very prominent position. We were at one time in great suspense about the *doyen* of horticulture, our amiable friend Mr. John Lee. For some time we were daily expecting to hear of his departure, but his vigorous constitution although at his advanced age (eighty-two), he has recovered and when I saw him a week ago he was the same bright and cheery old gentleman that he was before his illness. May he be long spared to us!

Each season must bring with it its lessons, but the danger is that in our variable climate one season is so unlike another that we must not suppose it is always to be the same as that which we have suffered from. Could anything be more opposite than the seasons of 1887 and 1888—one, the perfection of a summer, the other without any summer worth the name? In fact an English gardener must be armed at all points and be cautious. Already I see that persons are calculating on a late season next year because we have had a late one this year, whereas it may be an early one. We have a dry season, and we get all sorts of warning about the folly of not storing our water; we have a wet one, and then we are told how foolish it is not to devise means of getting rid of our superfluous water. Do not run into extremes; the middle course is the safest.

And now, my brothers and sisters in the craft, a word of encouragement. "I have been young and now am old." I can look on upwards of fifty years of gardening, and can truly say that it has been to me a source of joy and happiness. A large portion of my life was an arduous and weary one, but I can say that, whether in the midst of all the cares and worries of a large town parish, or in the quiet moments of a rural one, I have ever found my love of flowers helpful. I love them for their own sakes, and they have returned my affection. I can say, too, that they have brought to me many friends and but few enemies (I believe that the man who has none is a poor jellyfish sort of a man who has shirked his duties and responsibilities); and now, as the evening of life is closing round me, I can wish my readers no better wish than that they, too, may find in their gardens the solace and the pleasure that I have done; and so, in this, the last issue of a year's Journal, in which I have often spoken to them, I wish them one and all,

A Happy New Year.

—D., *Deal.*

COVENT GARDEN AT CHRISTMAS TIME.

At all seasons of the year a visitor who is interested in the horticultural products of this country can spend a profitable half hour in Covent Garden Market, especially if he select the early hours of a market morning for his visit. But at particular periods of the year, whenever the British public are preparing for a general festival, and cultivators are making special efforts to meet the demands for abundance of flowers, fruit, and vegetables, Covent Garden Market can be seen at its best and its astonishing resources realised. For general supplies, no time of the year equals Christmas. In the spring months there is, of course, a greater abundance of flowers, and during the Strawberry season there is a corresponding bustle in the fruit market, but at this time of year concentration of work and supplies is more evident in all departments together than at any other time. Salesmen, shopkeepers, and porters are busily employed in disposing of the produce which arrives in such large quantities, the frequent auction sales are attended by crowds of eager purchasers, and the whole aspect of the market is one of earnest hurried business. A brief glance at the respective departments will give some idea of what is provided for metropolitan celebrators of the Christmas festival.

FLOWERS.

The chief demand is apparently for white flowers, at least these constitute a large proportion of the supplies, Chrysanthemums, Lilies of the Valley, Camellias, Eucharis, and Roman Hyacinths, with the stately spathes of Richardias being first favourites amongst these. But in addition there is abundance of white Azaleas, Bouvardias (these also furnishing coloured varieties valuable for wreaths, sprays, and buttonholes), Cyclamens, Lapagerias, Carnations, and French Lilac, Paper White Narciss, Roses, Tuberoses, Gardenias, and Stephanotis. Several of these, besides the Bouvardias of course, also afford coloured flowers, as Cyclamens, Lapagerias, Narciss, and, Roses, but the principal rich colours are afforded by the Zonal Pelargoniums, the Poinsettia bracts, and the brilliant wreath-like branches of Euphorbia jacquiniæflora. More delicate shades are supplied by Primroses, Mignonette, and Marguerites, while the indispensable Violets, though numerous, seem to be in unfailing demand. From this list Christmas Roses (Hellebores) must not be omitted, as they are especially appreciated at this season, and they make charming wreaths, one we saw recently consisting of bronzy Ivy leaves and Christmas Roses alone having a most elegant appearance, far superior to those overloaded with Richardias or even Camellias.

The plants in the market at this time of year consist mainly of small evergreens in pots, with the ordinary foliage plants employed for decorative purposes, such as Palms, Dracænas, and Ferns, but amongst flowering plants the winter-flowering Heaths are conspicuous, Erica hyemalis and E. gracilis being sent in large numbers. Forced bulbs, like Roman Hyacinths, are plentiful, but Lilies of the Valley in pots are not supplied very largely so early as this. Poinsettias, Marguerites, Pelargoniums, Primulas, Solanums, Cyclamens, Chrysanthemums, and Begonias are sent in by many growers, Cyclamens being perhaps the most numerous.

FRUIT.

During the whole of last week the market has appeared to be simply glutted every day with fruits; huge piles of boxes, barrels, and baskets filled every available portion of space, and it is astonishing where such quantities could be disposed of. Apples and Oranges are the two great features of the Christmas market, and the supply this year seemed to be greater than ever. It has recently been noted that the supply of American Apples is larger than usual, nearly twice as many (half a million barrels) having been already shipped to Europe as in the same months last year. In the Floral Hall at Covent Garden many thousands have been sold by auction within the past week, one salesman alone having disposed of 4000 barrels in a morning's sale. These are mainly Newtown Pippins, which command the highest prices, and the fruits take their places in the best fruiterers' windows, the richly coloured Baldwins, and King of Tompkins County, which some of the shopkeepers abbreviate to "King Tompkins." A few choice consignments of English Apples are seen, but these are very much in the minority.

As an ornamental Apple, the pretty little Api, or Lady Apple, tastefully wrapped in coloured tissue paper and displayed in neat boxes, is very notable, and few, probably, of those who admire it, have any idea of the history attached to it. A full and learned account is given in Dr. Hogg's "Fruit Manual," but the chief points are that it is of great antiquity, and has been said to have been introduced to Rome from Peloponesus by Appius Claudius, though others assert it was first found as a wilding in the forest of Api in Brittany. It was not known in this country until the end of the seventeenth century, and is now extensively grown in the United States.

Pears do not call for special mention. Grapes include both English and foreign produce, the former running up to 4s. 6d. per lb., quite a small price compared with what used to be paid for good Grapes at Christmas. Oranges are supplied in thousands of cases, from the huge Jaffa variety to the miniature and delicately aromatic Tangierine, which, in silver paper and ornamental boxes, makes a companion for the Lady Apples already noted. Pine Apples are seen in all grades and qualities, from those which make their subsequent appearance on costermongers' barrows to handsome fruits of exhibition size, which adorn the windows of such fruiterers as Messrs. Webber & Solomon in the Central Row. Of other tropical fruits the Prickly Pears, Mangoes from Madeira, Custard Apples, and Lytchees are the principal, but they are only sold in relatively small quantities as curiosities, or for the tables of those who have been familiar with them in other lands.

Nuts are also an important commodity in Covent Garden at Christmas, bulky bags and capacious baskets being filled to overflowing with small nuts, Brazils, Chestnuts, Almonds, Cocoa Nuts, and Walnuts; while of what may be termed the curiosities there are Sapucaias, something like Brazils, and the Butter-nut (Caryocar nuciferum), not often seen in London markets.

The indispensable Christmas accessories, such as Mistletoe, Holly, and miscellaneous evergreens for decorative purposes, are supplied as usual in large quantities, the crates of Mistletoe arriving by waggonloads. It is evident that, great as is the annual demand for this plant, there is no falling off in the supply.—Visitor.

STEPHANOTIS FLORIBUNDA.

During the past few years we have heard considerably less about shy or non-flowering varieties of this plant. I am of opinion that there have never been substantial reasons for such opinions, and the fault has been with the cultivator and not with the plant. I do not mean to infer that there are not varieties of different merit. It is just possible that improved forms may be in existence by raising seedlings and careful selection. Two examples have come under my own observation, and the only noticeable difference that I could discern was in the shape of the foliage, the difference being so slight that it was not seen by a casual glance

at the two plants. One was considered a free-flowering variety and the other the shy-flowering sort. The latter was raised from a cutting from a plant that was condemned on this account and thrown away, and which was slightly rounder at the extremity of the leaves than the other. As the plants increased in size it became necessary to select one or the other. The choice fell on the largest plant, which was the shy-flowering one, although it had not displayed any disposition to flower freely up to this stage. But we have had no occasion to regret the choice, for during the past two years, although the plant has grown luxuriantly, it has also flowered profusely. Some of the short stubby growths have been regular bouquets of bloom, while the long strong growths (some of them 2 inches in circumference at the base) have yielded large trusses at every joint.

In many gardens this plant is grown under conditions that are not favourable to flowering it even moderately well. The stove proper is no place for the Stephanotis, and under ordinary stove treatment I should be surprised if it did flower satisfactorily. The conditions of an ordinary plant stove is too warm and too moist for it, often too shaded, and in addition the plant is deprived under these conditions of a complete season of rest that is of the utmost importauce if flowers are to be had in abundance. The heat and moisture of an ordinary stove are certainly favourable to rapid, even luxuriant, growth. Anyone anxious to produce large plants quickly could not do better than push them on in brisk heat and in a moist atmosphere, but when they want flowers the treatment must be altered, or disappointment is certain to follow.

I have said plants that fail to flower satisfactorily are often overshaded, and this may arise, not only from the application of shading to the roof, but by training the shoots of the plant too thickly together. This course is objectionable by affording too much shade to the young growths, and it preveuts the thorough ripening of the wood after flowering by the exclusion of light and air. This method of training provides one of the best harbours for mealy bug that can possibly be had. To flower the plant profusely it should be freely exposed to the sun. This insures the solidity of the young wood sufficient to flower well and thorough ripening afterwards. Training, on the principles indicated, may be followed to prevent the shoots twining together and thus becoming unmanageable. The best of all methods of training large plants grown under the roof is to draw the shoots as they grow from the roof and allow them to hang from the plant in a natural manner. Although the shoots grow several yards in length on this principle, they appear to flower with greater freedom than if trained thinly on strings close under the roof, which is the next best method of training the growths of vigorous plants. If the shoots are drawn downwards they are kept in order with very little trouble, and insects are easily kept down by being able to syringe every portion of the plant. Drawing the shoots down so that they hang naturally is advised after the plant has filled the space allotted to it, or is sufficiently full of wood at any position under the roof. If the object is to fill space, then all the leading growths should be trained under the roof. This method allows of securing double the wood that would be the case if the young shoots had to be trained in that position as well. This means double the flowers, or nearly so. By this mode of culture the earliest shoots that have flowered ean be cut close back. They invariably, in a good season, produce others that will flower freely. At any rate the wood ean be thinned without much trouble when cleaning and pruniug time arrives, and that left is needed for training under the roof. When once the roof is well furnished the whole of the shoots can be pruned close baek, leaving two or three pair of leaves only on the current season's wood. The cutting away of large quantities of wood at one time should not be practised; it should be done gradually to avoid a check to the roots, and thus causing quantities of young fibry roots to die.

Sometimes the stove is too warm and too moist for this plant. The conditions generally maintained in such structures encourage soft wood at the expense of flowers. If blooms are required early the plant may with advantage be started in a brisk moist temperature, but as soon as the growths are 9 inches or 1 foot in length gradually lower the temperature by using less fire heat at night and by admitting air during the day. This means a dry atmosphere and firm wood. From the end of May this year we discontinued the use of fire heat. Air was admitted liberally during the day, and the house closed moderately early during the early part of the season. Since then the ventilators only have been closed at night; during the day the structure has been aired the same as a greenhouse. During October and until the plant is started again into growth the night temperature will be 50°; in ease of severe weather we shall allow it to fall to 45° by morning. The atmosphere for some time has been dry, and the plant on the dry side at its roots. Under these conditions ripened wood of the best quality and a complete rest is insured.

By following this or similar treatment, and growing the plant in fibry loam and one-seventh of manure, with charcoal and sand added, the supposed shy-flowering varieties would prove themselves profuse enough to satisfy all.—Wm. Bardney.

CHRISTMAS VEGETABLES.

About this time last year, when complimented on the quality of our Pine Apples and the excellence of our forced Asparagus, we took it as a good opportunity to remark that our glass structures were neither so modern nor numerous as we would like them. The reply was, "Perhaps not, but we always have plenty." To merit this remark has been our ambition for many years, and it represents an accomplishment which every cultivator in the country should strive to acquire; but more especially at Christmas, when produce is expensive in the market and much appreciated on the table. If ample forcing appliances are provided Asparagus, Seakale, and Rhubarb should be forthcoming in quantity at Christmas, and where no special constructions are supplied for the purpose efforts must be made to work them in by contrivances.

To have superior forced vegetables now, apart altogether from forcing appliances, it is absolutely necessary that the roots be well grown. Weak Asparagus roots, spindly Seakale thongs, and exhausted Rhubarb clumps will never yield strong, juicy, and abundant produce. It is therefore the duty of all who intend forcing these at Christmas to supply themselves with suitable roots, and to do this several years are required; but when forcing is converted into a system and provision is annually made to meet the demands good roots will never be wanting. Asparagus, Seakale, and Rhubarb are the main kitchen garden roots for forcing; each of them gives the highest satisfaction on the table at this time, and the more detailed means of growing them have often been given in these pages. Next to these, as an artificially grown commodity, come Mushrooms. They form a valuable breakfast as well as a dinner or supper dish, and plenty of Mushrooms, especially when open air vegetables are scarce, are most valued. In Mushroom growing, and indeed in all else that has to be in for Christmas, a great deal of forethought is required, and with a due amount of this properly applied there need be little anxiety; failure will be the exception.

But it is not in forcing roots alone that forethought is needed. We all know that herbs are luxuriant in summer and in greater demand at Christmas than any other time; but their abundance four or five months ago will do nothing to supply the demand now unless quantities were cut, dried, and stored in the season of plenty. This may appear a small matter, but we have known many good gardeners considerably worried over this little omission. This is no season for raising and hurrying in any vegetables in the open air. The majority of them must have been planted some months previously. These include Brussels Sprouts, Savoys, Leeks, Broecoli and Spinach. Brussels Sprouts are quite in season at Christmas. At that time they may be regarded as the choicest of all open air greens. Although the past season was not in their favour they have "buttoned" well, but they have hardly gained their usual height. Savoys are much coarser, yet useful. Broccoli are not always plentiful at this time of year, even where plenty of plants are grown, as their "heading" depends very much on the weather. Frost is much against their forming, but it does not kill the plants and only retards them. Spinach should be almost fully grown before now, as it does not make much progress at this season. Parsley is always in great demand. Full grown plants are the most useful. Frost shrivels it considerably, and it may be necessary to protect some with hoops and mats. Parsnips may be left in the ground and dug as required, so long as the ground does not beeome frost-bound, and previous to this a quantity should be lifted and stored for use during the time the frost lasts. The same remarks apply to Salsafy. Roots, and bulbs, including Carrots, Beet, Onions and Potatoes, should be stored early in winter for Christmas use. Onions are important, and a good supply of them must be fortheoming. Until now these roots have not kept so well as they have often done, and as they will all be required for a long time they must be examined and all defaulting specimens removed. Mustard and Cress are great helps in salads, but they are so easily raised in quantity that little need be said about them.—A Kitchen Gardener.

GARDEN WALKS.

There is nothing in a garden, nor connected with it, that affords a greater amount of comfort or gratification than a good walk, for in it "beauty and utility" ought to be strictly united, and, in fact, it cannot justly be called a good one unless it possesses both these qualifications; and for such walks as intersect the kitchen garden utility may be regarded as of paramount importance, for it is reasonable to suppose that the walks in a kitchen

garden have a much greater amount of hard work to do than those in the pleasure ground ; their structure must be regulated accordingly—a larger amount of stone being used in their formation. But before engaging on this duty let us take a view of walks in general, and see what alterations the last few years have made in the way these have been brought about.

An examination of one of our ancient highways will easily convince us that our ancestors were more liberal in the materials they used in those days than we are now. The same, in fact, as they were in their buildings, furniture, and other things. Indeed, it does not appear that in the good old golden times there was any lack of materials, and there are few objects now remaining that evince any niggardliness in their construction. Old roads, for instance, contain many cartloads of large stones for their foundation, which the disciples of Mr. McAdam regarded as little short of downright waste. Be this, however, as it may, certain it is that some of their old roads had withstood a deal of wear and tear, and it is questionable if our present economical plan, as we call it, is not accomplished at a certain amount of loss in the stability of the road.

However, as the cartage of stones and other things always forms an important item in the expense of the whole, we may set it down as a paramount duty to make these go as far as possible, which may be accomplished in many ways with better effect than tumbling them into a pool or dirty hole ; for it often happens that the formation of roads or walks must take place in wet weather and in muddy places.

The first duty is to well drain the roadway, and, as we suppose our present one to be a garden walk, it will be easy to convey the water into the main drains by which the garden is intersected, supposing it to be so drained, or, if it does not want such draining, still to make sure that the walk be tolerably dry.

My plan in making a new walk in stiff, heavy, clayey ground is to scoop out the interior, so that the centre of it may be some 7 or 8 inches deep or more, while the sides are not more than half that depth ; then, along the centre, which is the deepest part, I cut a drain and lay in ordinary drain pipes, filling it up with stones and a coating of stones all over the foundation of the walk, and then a finer sort of stone, and finally the gravel ; the advantages of the ground being cut into something like a furrow at the bottom enables the water to run off into the drains and so be carried away. Very broad walks will want two or more of such drains ; and I once arranged a considerable width of carriage-front roadway on this principle "of ridge and furrow," which acted admirably, the ground being a tenacious clay and the situation a moist one ; but in ordinary garden walks the best roadstone need not be used, for common materials will do ; useless lumps of stone or brickbats that may have been in a building will be very useful, especially if there be any of the old mortar adhering, as that is distasteful to worms, which are sad enemies to walks. Clinkers or the refuse of factory fires are equally applicable, or stones of any kind are all alike wanted, the object being to form a sort of bottom through which the water might drain ; a harder description of stone may be nearer the top, for the walks of a kitchen garden have often to endure the wheels of barrows and other hand-carriages, so that we must not deny these walks the necessary hardness to bear such heavy loads ; at the same time it must be borne in mind that they must present a smooth even surface as well.

Supposing the foundation of the walk to be completed, and that a covering of good hard stones broken pretty small has been laid over that, we will then see what surface material can be had ; and in the first place stands gravel, which is, no doubt, the widest-spread material that we have, and which exists, in one shape or other, over most parts of the kingdom ; but it is not necessary here to describe the best, as local circumstances usually determine what has to be used. One thing, however, may be said, that the kind which is cleanest in winter or wet weather very often gets loose and feels unpleasant in dry weather in autumn ; while that which is somewhat sticky in winter or after rain often becomes very hard and firm in dry weather in summer. These points being extremes, it would be as well to avoid both, and select a gravel containing a part of the good properties of both.

Next to gravel are broken stones, or what are called crushed stones, none being larger than a Walnut. These may be used in like manner to gravel, and some that I have seen are preferable to that article ; the best being the kind sometimes had in mining districts where lead and other metals are worked ; this I have seen formed into a walk superior to that of any gravel that can be had ; but as this can only be had in certain localities we must pass on.

Ashes, or the refuse from some iron-works, or other places where extensive furnaces are at work, form pretty good walks, some being of a sort of copper or bronze colour, and certainly distasteful to weeds and worms, as some of them contain poisonous matter, which makes them a long time proof to weeds. When this can be had it may with advantage be used as a covering to walks ; but it is not applicable everywhere, and if not hard it must not be used too plentifully in kitchen-garden walks, as the stones underneath it must do the work for it.

Many other substances might be used as a covering, but local circumstances often determine them. I will add no more at present, but may say that in hilly walks or those having much descent lime may be used to some advantage. I have used some lime in a pounded state mixed with the gravel when dry and laid on in that state, and after a good watering and beating it gets very hard. This is the principle of concreting ; but I have never yet been able to do it so effectually as to prevent the evil effects of summer thunderstorms where the descent is of considerable extent, but this concreting is of great service. Where expense is not an object the best of walks are made of asphalt, and these are perhaps cheap in the end.—J. N.

IVY.

The Ivies are naturally climbers, and as such they are generally planted. The varieties are often the result of sports, and have a strong tendency to return to the normal state, especially some of the variegated kinds. Nearly all the variations in size of leaf and habit of growth may often be seen in woods, where the common wild Ivy, with small leaves of a grey colour, having shining veins of white, may be met with along with others of larger and greener foliage in every gradation up to the robust Irish Ivy, which, I may remark, is the most useful one we have, and that most generally cultivated. I am not positive that it is the best climber, but its rapid growth, and its property of forming fresh leaves when cut-in, render it suitable to most places where it is subjected to some degree of management.

Even this Ivy presents a difference in its foliage, leaves broadly palmate being met with at one time, while others almost lanceolate or ovate are formed higher up the plant, and the climbing shoot becomes a short, dense, bushy-headed one when it can find nothing to cling to, or where the plant is stunted in its growth, as may be seen where an aged tree is covered with Ivy, and the laterals thrown out can find nowhere else to travel. The Ivies form picturesque, I may almost say grotesque objects, where they cover a curious-headed pollard, and the most symmetrically trained pyramidal or conical Azalea has more than its equal in some large Fir trees that I have seen covered with this plant.

With regard to trimming the Ivy, I by no means agree with some as to the proper time for doing so in the south and more favoured parts of England, though the case may be different in the north, where the plant is less robust. The plan we adopt is to cut-in closely the Ivy covering dwelling-houses in the beginning of August, very often scarcely leaving a leaf, and yet the whole plant is again densely covered with foliage five or six weeks afterwards ; and the season being then too far gone, the growth is confined to leaves, which, with us, become firm and established before winter, so as to sustain no injury from frosts. Thus the Ivy looks trim and neat up to the following June, when the summer shoots begin to elongate. It will be seen that there is with this plan a period of fully eight or nine months in which the plant looks as uniform as the wall against which it clings, while the remainder of the time may be divided about equally between the period of the shoots growing in early summer and that of the formation of foliage in the latter part of the season.

Let us see what are the effects of cutting Ivy in March. The formation of fresh foliage or shoots will then take about the same time as in the former case, while the period during which the Ivy forms a close carpet is very short indeed. Shoots of some length are formed, and these, remaining unshortened until the following March, are often in the way when a trim and symmetrical appearance ought to prevail. Observe, I by no means advise the trimming of Ivy in August when there is a danger of the leaves not being produced sufficiently early to withstand the autumn and winter frosts ; but when the operation can be performed at that time with safety, let it be done.

As to the propriety of covering a dwelling-house with Ivy, there are various opinions, many contending that appearance is the only recommendation it has ; but to trees it is very injurious ; many an Oak has been strangled in its embraces, and Pinuses suffer still more. Within a very few yards of where I write, a Spruce Fir upwards of 70 feet high has been for some years struggling for an existence, which is gradually drawing to a close. A few small patches of green on the tips of some of its branches are all the signs of life which it exhibits. The tree may survive one more year, while the mantle of Ivy triumphantly takes possession of the whole of the trunk ; the Ivy branches, dense as Box, protrude in all directions, forming an elongated cone of greater symmetry than ever the Spruce did in its best days. The Ivy has not taken possession of any of the dead branches, although many of them

are from 4 to 6 inches in diameter at their base; but the creeper apparently disdains to trust them as supports, and confines itself to the trunk. This support, however, will also have an end, for we have lost several trees, which had become quite denuded of branches, and only presented a beautifully tapering Ivy-covered spire.

The trunk of the tree, when deprived of its vitality, can no longer resist decay, and when it becomes too weak to withstand a high wind, its load brings the whole down. Even Spruce and Larch trees containing from 50 to 100 or more cubic feet of timber are not proof against the elements, and the downfall of the structure is only a matter of time. Sometimes such pillars will be blown down by the root, and sometimes broken off in the middle. One which suffered in the latter way was about 18 inches in diameter at the place where broken, and was not far advanced in decay. Such casualties cannot well be prevented except by bracing up the dead stem, like the mast of a ship, but doing so would mar the effect.—A Kentish Gardener.

PRUNING AND CLEANING VINES.

Many Vines where the vineries are limited are not well cleaned and pruned in winter. The reason of this is that the houses are almost invariably crammed in winter with all kinds of plants. There is no room to turn in them, far less clean and prune the Vines as they ought to be done. "Well," it is said, "we must put it off until the spring, when many of the plants will be cleared out," but in the meantime a little fire heat is applied to expel damp and exclude frost, and this goes on until the Vines are induced to grow, then it is seen they cannot be properly cleaned or pruned. As soon as the leaves have fallen this work might receive attention, and many are now ready for the operation. If the vineries are full of plants these will suffer less through being turned out to another house or shed now than they would do in the months of February or March. There is little use in attempting to clean a vinery thoroughly unless everything is cleared out. When the plants have to be moved back and forward, and from one end to the other, it is difficult to do the work satisfactorily, particularly if insects have to be exterminated. Red spider, thrips, green fly, and mealy bug are the most common, and the latter is, perhaps, the worst of all to clear out.

Pruning, however, should be done before cleaning, and if this operation is neglected the Vines will soon degenerate. The general disposition is to allow too much wood to remain. It is much easier keeping Vines clean, healthy, and fruitful where rods and side shoots are thinned than where they are crowded. If the main rods have become too crowded, now is the time to cut some of them out. Letthe most fruitful remain in removing superfluous rods should be the first operation, then go on pruning those that remain. If a Vine has two rods, one old, the other young and vigorous, the latter should be left. If young rods have been recently formed that are strong and capable of bearing a number of good bunches, do not cut them down as was done of old, but let it remain from 6 feet to 10 feet in length. All straggling points should be cut off young rods, and only wood of a fruitful character left, and any little side growth should be removed. Old rods full of spurs from which the young side shoots have been emitted are pruned by cutting in these growths to two or three buds from where they started last spring. Two buds, as a rule, are sufficient to leave, as the longer the growths are left the longer do the spurs become, and this is not desirable. If any spur has produced two shoots, one at the extreme and the other nearer the rod, cut all back to the latter, as short spurs are better than long ones. As pruning is finished attend to the cleaning. The bark on the young rods of this year's growth clings so closely to them that it cannot be removed without injury to the rod, and as no insect can harbour under it, there is no occasion to attempt to remove it, but all rods of more than one year have much loose bark, a favourite hiding place for insects. If mealy bug is there every particle of loose bark must be removed, and to do this it is generally necessary to employ a blunt knife around the spurs. If done with care the wood need not be injured in the slightest.

In washing the Vines add two wineglassfuls of petroleum to every gallon of water, and a quantity of softsoap. Scrub the Vines with this and every part of the woodwork. Do not miss any hole or corner, as it is in these enough of insects may be lodging to restock the house immediately the Vines begin growth again. If the woodwork is deficient of paint, give it two coats, and limewash the walls thoroughly. After this some growers paint their Vines with a mixture of clay, soot, and sulphur, but we have ceased to do this, as the paint is apt to shut in some insects if any are left, and they will not fail to appear as the paint goes off, whereas if the Vines are left quite clean it can be easily seen if any pests come out later on.—J. M.

HEUCHERA SANGUINEA.

The species of Heuchera most generally seen in gardens are more



Fig. 65.—Heuchera sanguinea.

valued for their foliage than their flowers, and at the base of rockeries they make beautiful clumps of green or bronzy leaves. One, however,

that is not at present so well known, though it is likely to become exceedingly popular, is H. sanguinea, illustrated in fig. 65, which for gracefulness and richness of colour far surpasses all the others. It is a hardy perennial, with neat little roundish crenately lobed green or bronzy leaves, from amongst which arise the tall slender graceful flower stems, each bearing a number of small flowers of a brilliant rosy red hue, a peculiarly pleasing and distinct shade of colour. Out of doors it thrives well in an ordinary border provided the soil be not too wet, and Mr. Ware has been very successful with it at the Hale Farm Nursery, Tottenham, while at Kew its characters have also been well displayed. As a border plant its value cannot be over-estimated, but it is also useful for another purpose—namely, in pots for greenhouse or conservatory decoration. The graceful habit of the plant fits it admirably for this work, and the brightly coloured flowers are seen to the best advantage disposed with Ferns or flowers of more delicate tints. At Kew several groups of the plant have been arranged on the shelves of the greenhouse during the past season, and the merits of this Heuchera have been demonstrated. It is easily increased by division, and probably also by seed.

SALADING IN WINTER.

LETTUCES.

As far as my experience goes the owners of large gardens are kept well or fairly well supplied with salading all the year round, but the case is very different in smaller places, those in charge of the majority of these failing to provide a good salad from the time Lettuces are over in the open till the earliest are cut the following season; yet it is by no means difficult to provide plenty of winter salading. The English do not profess to be a nation of salad eaters, but in spite of this supposed indifference I venture to assert nine-tenths of those who may take part in a public dinner do full justice to the contents of the salad bowl; and what wretched salads some of these are! Nothing better than quite green Lettuce or very slightly blanched Endive is principally used, and if this disappears so rapidly what would be thought of the crisp and beautifully blanched material such as may be found on many private tables at this time of year? As I shall attempt to prove, it is almost as easy to provide well blanched sweet and crisp saladiug as it is to have the inferior article, if only a little more pains were taken. At one time I was under the impression that nothing could equal Lettuce for laying the foundation of a good salad, but that was before I had developed a craviug for a salad every evening. In reality, Lettuce from the time it ceases to blanch properly is inferior to well grown Endive, and fortunately the latter can be had in large quantities without encroaching upon space required by Lettuce or any other vegetable. Hundreds of plants can be had from a packet of seed, this being sown at fortnightly iutervals, dating from near the end of July to the middle of August. According as the borders and open spaces are cleared of early Peas, Kidney Beans, Potatoes, Cauliflowers, and other early crops, for which the ground was well manured, these can be cleared, digging not being necessary, drills being then drawn with heavy hoes, well soaked with water or liquid manure, and planted with Endive. The Moss Curled is the earliest to arrive at maturity, this blanching without much trouble, and is also the first to succumb to frosts. In succession to this can be had any of the good forms of Green Curled, and this again may be beautifully blanched crisp and sweet by the time Lettuces fail, and a supply can be kept up through the winter. It blanches readily if tied up similarly to Lettuces, or it may be enclosed in flower pots covered with hay, boards, slates, and even moulded over, in the latter case being first tied up. For late autumn and winter supplies the Improved Broad-leaved Batavian is invaluable, this mixed with the Green Curled forming the principal iugredients of a perfect salad, no Lettuce being needed. Some of this may be blanched where grown, but the bulk should be reserved for winter use. Where so many fail with Endive is in being either too late in planting or in starvation treatment. If little beside a few outer leaves are formed they are comparatively worthless. A good heart is needed, and not till this is formed ought the blanching process to be commenced, as this stops all further growth, and when fully grown the hearts almost blanch naturally.

ENDIVE.

Where to keep it when grown may present a difficulty, but not an insurmountable one in but few cases. Quite young and only half grown Endive is nearly hardy, but fully grown plants are crippled by moderately severe frosts, and must therefore be protected in some way. We have them now, and at different times have stored the plants in a variety of positions, including the surface of borders in vineries, Peach and Fig houses, frames, open and covered sheds. All are carefully tied up and lifted if possible before the points of the leaves are injured by frost, and transplanted with a moderately large ball of soil and roots. Only those required for immediate use are packed closely together and not untied, the bulk being so disposed as to admit of the plants being unloosed and opened out. They can be tied up again where placed, or better still, some can be taken to the Mushroom house, where the blanching is quick and perfect. In every instance the roots are firmly bedded among rich and fairly moist soil, this keeping the plants fresh, and does away with the necessity for overhead watering. I have known Endive to keep many weeks, or till midwinter and later, when tied and buried to the tips of leaves in sand.

If Endive is preferred to very early Lettuce, frame culture during the winter is necessary. A portion of the latest raised plants ought to be planted on a raised border and covered with frames and handlights, additional protection being given in severe weather. These will grow slowly, and if removed to the Mushroom house for the blanching period any plants that have survived in the open may be transplanted to the frames. Since the introduction of the very quick growing Paris Market Cabbage Lettuce there has been less need to provide Endive during the spring months. Small plants of the latter may be wintered with little or no protection, or they may be raised in heat early in the year. Being duly pricked out in frames, and set on a gentle hotbed, this Lettuce grows very rapidly and forms excellent hearts.

MISCELLANEOUS.

Other ingredients are frequently considered indispensable in the salad bowl, but unless they are tender and fresh they had far better be dispensed with. Tomatoes are usually served separately, and it is almost needless to add are very popular, but at the same time ought not to be mixed with other saladiug unless all who partake of the salad have a liking for them. Beet, when of good colour and tender, is an improvement to the appearance and flavour of a good salad, but I doubt the propriety of adding any other kinds of roots. A few young Onions are much liked by some, and these may be had by sowing the seed late in the autumn in boxes of good soil, these being kept in any cool house or pit. Mustard and Cress, either alone or mixed with the other salading mentioued, is usually appreciated. In many establishments it is sent to the breakfast table daily, and evidently finds favour. Though of easy culture it is not generally grown in a satisfactory manner. Instead of sowing seed repeatedly in shallow boxes of soil with only a fresh surfacing, a complete change ought to be made each time, and then there would be no complaint of damping and weakly growth. The boxes ought to be lightly drained and then filled with old Mushroom bed refuse and soil, this being moistened prior to sowing the seed very thickly on the surface. The seed should be pressed in evenly, but not covered with soil. Closely cover with brown paper or mats and set the boxes in gentle heat, the paths of a forcing house or early vinery being suitable positions. Keep the shading on till the seedlings are about 2 inches high, when they may be uncovered and shortly afterwards transferred to a cooler house. Thus grown this small salading has long well blanched stems, is very tender, and quite free from grit. What watering is needed should be done very gently, and weekly sowings ought to be made.

Chicory is also largely used in salads, and may be said to improve its appearance, more especially when Endive is badly blanched, while the slightly bitter flavour is much liked by some. If several rows of seed are sown at the same time as Beet or Salsafy, and the seedlings duly thinned, abundance of thick roots will be available for forcing, these being stored with other root crops till wanted. The tops ought to be twisted off, and the roots being placed thickly in pots and surrounded by good soil, and duly set in a Mushroom house or warm cellar or very gentle heat, will yield a surprisingly heavy and continuous crop of small hearts and leaves. Unless these are well blanched they are too bitter to use, and if neither a Mushroom house nor cellar are available, the blanching must be effected either with the aid of inverted flower pots with their holes stopped, or somewhat similar contrivance. A dozen 10-inch pots would afford a good succession. Curled Chervil sown on a warm border in September and covered with a frame can be picked from throughout the winter, and Tarragon can be had by lifting the roots and forcing these in any heated house. Corn salad, unless exceptionally well grown, is rough to the palate and tough, and this is never used here. Celery is frequently used in salads, a few Watercress, and which are easily cultivated in pots, pans, and boxes, are always a welcome addition, and a floury Potato may be finely divided with a fork and scattered over the salad with advantage.

PREPARING A SALAD.

Although the foregoing remarks are somewhat lengthy, I shall yet venture to state my ideas upon the subject of preparing the ingredients and dressing of a good salad. Freshness is the greatest desideratum, a flabby and flat salad being most objectionable. What gardener has not had good and frequent cause of complaint against those responsible for preparing the salad? Either it is made three

or four hours before it is wanted, or proper care is not taken of the vegetable portion of the salad, Lettuce, Endive, and other ingredients being left in an exposed and perhaps hot position to flag badly, and this freshness once lost cannot be restored. Nor should they be kept in water for hours together, this frequently destroying crispness. The living portion of a salad ought to be gathered a short time, or not more than four hours at this time of year before it is wanted, and should be kept in a cool place both before and after it is washed and otherwise prepared. A moderate-sized salad might consist of two each of Green Curled and Broad-leaved Endive stripped of the green outside leaves, and not very finely shredded, to these being added about a dozen young Onions, a small handful each of Mustard and Cress, two hard-boiled eggs, and a small Beet duly sliced, one floury Potato, and about six sprigs each of Tarragon and Chervil. There are a variety of dressings for salads, some being very simple, yet good, and others more elaborate. Personally, I am in favour of a simple dressing, and prefer the French style of keeping these in a suitable bottle or other receptacle, individuals at the table taking as much as they like. Nor are some persons content with one kind of dressing, as, for instance, some people have a marked aversion to oil, others being fond of it, and two or more dressings would be more likely to meet all tastes. Much-minced and be-soaked salading would also be avoided. In conclusion, I will add a receipt for a simple dressing suitable for those who do not keep professed salad-makers and for gardeners. Place one teaspoonful of mixed mustard and one teaspoonful of pounded sugar into a bowl, and add two tablespoonfuls of good salad oil, drop by drop, and carefully stir these together. Next gradually add four tablespoonfuls of new milk and two tablespoonfuls of vinegar, with cayenne pepper and salt to taste. All must be carefully stirred together, or the sauce will curdle. This dressing may be either poured direct into the salad bowl, or else kept in a bottle, being available at least two or three days.—W. Iggulden.



ORCHIDS IN FLOWER AT KEW.

Considering that only comparatively small sums have been expended in purchasing Orchids at Kew, and that the greater portion are gifts or have been obtained in exchange, it is surprising what a large and interesting collection has been formed. The houses, open to the public at all times, contain some rare or beautiful plants in flower, and though I am a frequent visitor I have never yet entered this department without finding something of a noteworthy character. Extensive displays of a few species are not attempted, these can be seen in nurseries or private gardens, and the object of a national collection should be to provide as good a general representation of the Orchid family as possible. This is evidently what the authorities have been endeavouring to do for some years, and the result of their efforts is seen in a steady improvement both in numbers and condition.

INDIAN CROCUSES.

It was an excellent idea some time ago to provide a porch to the cooler of the two houses, as they can be utilised for those plants that require only the coolest quarters; and it answers a further purpose, as by means of the outer and inner doors the admission of cold draughts of air on to the more delicate plants is avoided. In ordinary private gardens this is a matter of importance, but in a public establishment visited by so many persons as Kew is, it cannot be over-rated. This porch is principally employed for Sarracenias, Droseras, the Dionæa, and similar plants, but during the past month or so it has been occupied with those charming little Orchids, the "Indian Crocuses," Pleiones, or Cœlogynes as we must now call them according to that great work, Hooker and Bentham's "Genera Plantarum." In shallow pans of moss the pretty little delicately tinted flowers cluster round the small leafless conical pseudo-bulbs in great numbers, almost concealing both plants and moss. Pleione Lagenaria, with pale purple sepals and petals, the neat lip fringed, blotched crimson, purple, and yellow in the centre, is one of the earliest and most profuse flowers. P. maculata is a charming contrast, the sepals and petals white, the lip spotted and streaked with purple, very free, and easily managed like the first named. Then there is P. Wallichi, one of the most handsome of all, with larger flowers, sepals and petals of a rich clear purple, the lip fringed white or blush, and a pale yellow centre. Owing to these plants flowering without their leaves, small Ferns are sometimes planted with the pseudo-bulbs to furnish a foil of green, but if plenty of fresh, green, healthy sphagnum is employed, these are scarcely necessary. After the flowering, when the light green leaves begin to expand, the Pleiones are almost as pleasing as previously, the tint of green being a peculiarly refreshing one in contrast with the darker or duller green shades prevailing in Orchid foliage generally.

MASDEVALLIAS.

The collection of Masdevallias at Kew is becoming very large and interesting, but it necessarily includes a considerable proportion of the small-flowered species which are too often regarded simply as botanical curiosities. It cannot be claimed for them that they furnish much in the way of colour to an Orchid display, but genuine plant lovers require something more than mere brilliancy of colour to interest them. The Masdevallias present a wide range of floral characters both as regards form and size, and it is regretable that the often suggested illustrated monograph of the genus has never yet been produced. Some time ago it was said that a titled gentleman in the north had undertaken the task at his own expense, and I believe large numbers of accurate drawings were prepared by a lady artist. I also understand that Mrs. Dyer of Kew has for a long time been engaged upon drawings of these curious plants, and her collection now must be almost unique. Those who know the excellent work performed by the lady named in plant-sketching will readily understand that the Masdevallia drawings are both artistic and botanically faithful, and it can only be hoped that at some future time they will be presented to the public.

Amongst the Masdevallias in flower were M. melanopus, M. macroura, M. polysticta, M. ochthodes, M. Reichenbachiana, M. pulvinaris, M. Chelsoni, M. Carderi, M. platyglossa, M. bella, and M. ignea.

Of other Orchids in flower, to which on another occasion an additional note or two may be devoted, were the following:—Cypripediums insigne (quite a large bank of flowers), Spicerianum, Sedeni, porphyreum, calurum, Leeanum, Harrisianum, conchiferum, and Roezli. Disa purpurascens, one of the blue flowered Cape Orchids introduced by Mr. Watson; Epidendrum (Barkeria), Lindleyanum, Oncidium tigrinum, Odontoglossum crispum, and O. Rossi varieties; Miltonia candida, Lælia anceps Barkeriana, L. autumnalis atro-rubens, Cirropetalum Wallichi, Catasetum macrocarpum, C. fuliginosum, Cymbidium giganteum, Calanthe Veitchi, C. vestita, C. veratrifolia, Liparis pendula, L. spathulata, Trichopilia suavis, Cœlogyne fuliginosa, C. fimbriata, and Maxillaria venusta.—C.

USEFUL WINTER ORCHIDS.

CALANTHES.

Late supplies of these plants will be invaluable for the conservatory now that Pelargoniums and other autumn-flowering plants are past their best. Do not place them in this structure before nearly all the flowers are expanded and the soil is perfectly dry in the pots. The flowers will last nearly double the length of time in a temperature of 45° to 50° than would prove the case if kept in the warm moist atmosphere of the stove. Be careful to place the plants where they will be free from drip, and where the atmosphere is moderately dry. In a low temperature and moist atmosphere the flowers are very liable to become spotted. Arrange them so that the pots are hidden by surrounding objects and the spikes of bloom stand well above other plants.

DENDROBIUM NOBILE.

Few plants when well flowered in 6 and 7-inch pots, or even larger, add more to the effective appearance of the conservatory at this period of the year than this old inhabitant of our plant houses. If the soil about the roots is dry before removal to such structures, and it is kept in that condition during the whole of the time they are there, no harm will follow; on the contrary, the plant will be benefited by the change. The flowers are so useful in a cut state that they must not be allowed to remain upon the plant long enough to rob next year's growth of the support which is necessary until they are well rooted and independent of the old flowering pseudo-bulbs. This plant can be used with safety in rooms provided it is not kept in too long or arranged where cold draughts will strike upon it.

ODONTOGLOSSUM ROSSI MAJUS.

Unquestionably one of the best and most profitable Orchids that can be grown where decorative plants are required in quantity, either for the room, conservatory, or for flowers in a cut state. By growing a good number there is no difficulty in having a succession of flowering plants from the middle of October until the middle of February. For single vases, pans of this plant 5 or 6 inches across, carrying six or seven spikes, with an average of three flowers on a spike each, are admirable.

PHAJUS GRANDIFOLIUS.

Very useful plants for the conservatory, and if they are wanted in bloom as quickly as possible place them in brisk heat, and their

flower spikes will advance rapidly. Directly the first flowers are open gradually harden them to cooler treatment before they are taken to the structure in which they are needed to do duty. Be careful to keep the soil dry at their roots. Give no more water than will retain their foliage in fresh and healthy condition. When water is needed apply it tepid. The plants are liable, when in flower, to attacks of brown aphides. Remove them, if they appear, with the sponge.

CŒLOGYNE CRISTATA.

Plants that were grown in a warm house, and have had a lengthened rest in a temperature of 50°, will be pushing their flower spikes rapidly. In order to provide a succession of these flowers introduce a few of the plants into a temperature 10° higher. The remaining portion of the early supply can remain where they are for the present, while later grown plants may be rested in a temperature of 45° to 50°. Do not overwater those at rest ; give only sufficient to keep the pseudo-bulbs plump.

THE ODONTOGLOSSUM HOUSE.

Watch diligently for slugs in this structure, for they are generally a source of great annoyance at this season of the year. Every effort to destroy them should be made, for if left alone they will soon do a large amount of damage now that the flower spikes are appearing freely on O. Alexandræ and O. Pescatorei. We have found a light syringing of petroleum and water, 1 oz. to 4 gallons of water, syringed on the stage amongst the pots, a capital plan for driving slugs from their hiding places to seek more genial quarters, when they can be captured. After syringing, if plenty of Lettuce leaves are laid about, they will quickly take possession of them, when under ordinary circumstances they would not have touched them. Dry cotton wool placed round the growing spikes proves a good preventive against slugs, but directly it becomes wet it is no hindrance to them. The best way to catch slugs is to examine the plants with a light about an hour after it is dark, after thoroughly damping the stage and pots.—ORCHID GROWER.

Notes & Gleanings

THE CHRISTMAS HOLIDAYS.—In consequence of the pages of this issue of the Journal having to be prepared for press nearly a week in advance. the publication of many valuable articles, including notes on new Chrysanthemums, Orcharding, Grapes, Auriculas, and various other subjects, must of necessity be deferred to a future issue. We thank all our correspondents for their co-operation in enabling us to complete two issues of the *Journal of Horticulture* in one week.

—— AT the dinner of the CARDIFF CHRYSANTHEMUM SOCIETY recently there was a good attendance of members, representing the chief gardeners in the district. The Secretary, Mr. C. R. Waldron, stated that the balance in the bank after all expenses were paid is £49 3s. 9d., a very satisfactory condition.

—— NEW FANCY PANSY, MRS. B. WYNNE.—Mr. John Downie of Edinburgh sent me in the middle of November a bloom of this very fine seedling of his, which is, I think, to be sent out in spring. It is a grand flower in form, size, and substance, rich in colour, with an immense clearly cut blotch.—W. D., *Solihull.*

—— MANY of the Salvias are useful for culture in pots during the winter months, and one of these, which is not so frequently grown as others, is SALVIA LEUCANTHA. It is of bushy habit, bearing long narrow leaves and tall spikes of white flowers, the calyxes of which are woolly and of a soft mauve tint. This Salvia is very free in flowering, and in contrast with the bright S. splendens or the beautiful blue S. Pitcheri it has a capital effect in a conservatory.

—— IN such an exceptional season as the present so many plants have been recorded as flowering out of doors that some gardens have presented quite a spring-like appearance. We have had plenty of Primroses, some Violets, and other plants in flower for weeks, but one of our favourites is STERNBERGIA LUTEA, which has been bearing its golden flowers for some time past, but is now losing its attractions. A small bed is formed of the bulbs, and, as every one flowers, they produce a good effect if planted rather closely together in rows. They are dwarf, the leaves narrow and dark green, the flowers peeping up amongst them. —L. W. S.

—— IN addition to the letter on seedling Sugar Canes in another page, the "KEW BULLETIN" FOR DECEMBER contains information on the Inhambane Copal (Copaifera Gorskiana), several other species of the same genus in Africa also affording copal. The tree produces a hard and valuable timber, but it has not been long known that it yielded copal of commercial value. Specimens, with fruits and seeds, were introduced to Kew by Mr. Heathcote in 1886. Several hundred seedlings were raised and despatched to many of our tropical colonies. The cultivation of Rice in Bengal is the subject of an article. To the Silkworm Thorn (Cuchania triloba) a chapter and illustration are devoted. Jamaica Indiarubber (Fosteronia floribunda) and Ramie (Boehmeria nivea) are also treated upon. This number completes the volume for 1888, comprising 298 pages, and dealing with a variety of subjects of special importance to those interested in colonial resources.

—— THE ROYAL METEOROLOGICAL SOCIETY has published its "Meteorological Record" for the first quarter of this year, containing the monthly results of observations made at its stations, with remarks on the weather by Mr. W. Marriott. The Society commenced the organisation of stations on a uniform plan in 1874, and these were supplemented by another class of stations, termed climatological, in 1880. Since 1881 the results have been published in a separate form under the above title. A map of the stations is issued annually, and shows that they are fairly well distributed, except in Wales. In addition to the monthly results, tables of daily rainfall are given for a number of stations, and of the daily temperature and sunshine in London and the suburbs. The monthly values published by the Registrar-General are also appended, and the whole forms a valuable record of the meteorological statistics of England and Wales, issued well up to date.

—— AT a meeting of the FRENCH METEOROLOGICAL SOCIETY on November 6th, M. Lemoine presented a summary of the rainfall observations of the basin of the Seine in 1887. He stated that the rainfall was everywhere below the average ; in the Department of the Seine-Inférieure the totals for the year were the lowest in a series of twenty-one years. M. Renou stated that the late M. Hervé-Mangon having expressed the wish that his observations made at Ste.-Marie-du-Mont should be published, Madame Mangon had handed them over to him for publication at her expense. M. Renou presented a note on the temperature of October at Paris since 1757. He pointed out that during the last 130 years the month of October presented either a low or a high mean every twenty or twenty-five years. Means as low as that for October, 1887—viz., 44·1°, were very rare. Since 1757 the lowest averages for October had occurred in 1784 (45·3°), and 1817 (45·1°).—(*Nature.*)

—— SOME reference was made recently to a note published respecting a collection of BOTANICAL OBJECTS FROM COREA sent to the Kew Museum, and the following further particulars are interesting. "Some of the hand-screens presented by Mr. Watters to the Kew Museum were given to him by the King, and are of much finer workmanship than those that are purchasable. The oil-steeped paper tobacco-pouches and hat-coverings are a close imitation of oilskin ; the latter, which when opened is cone or tent-shaped, is used by all classes except the peasantry, even including the soldiers. The Corean boy's kite, which is also made of Broussonetia paper, consists of a piece of paper about a foot square with a circular hole in the middle, kept in form by thin strips of bamboo ; a thin string is attached to each corner and brought together and connected to a single string, which is wound upon a wooden windlass. The perfection of splitting bamboo into thread-like strips seems to be divided equally between the Chinese and the Coreans, judging from a remarkably fine example of a blind which forms one of the exhibits. These very fine blinds are said to be used only by high mandarins, and the coarser kinds by the lower classes. Another illustration of very fine work is in the utilisation of split rattans in the manufacture of articles of clothing, an undershirt and cuffs of very open ornamental workmanship being made entirely from this material, which is both soft and pliable. These shirts are said to be used next the skin in hot weather to prevent the outer shirt adhering to the body."

—— TOMATOES.—I have been growing about half a dozen sorts of Tomatoes in a good-sized house, and on the centre flat stage we planted in a shallow bed of turfy soil and manure, and many wonder that they do so well on so little soil. The side stages are filled with plants in pots, all in 6-inch and 8-inch, with no manure under them, only occasional manure waterings and plenty of water. I grow Hackwood Park Prolific,

because it is one of our all-round best varieties ; a good size (I have one plant in an 8-inch pot with a dozen fruits, each from 5 to 6 ozs. in weight, besides smaller ones). Sutton's Reading Perfection is a very fine variety, and weighs heavily, more so than Hackwood Park, but does not crop so heavily, but it is a variety to grow. I planted out a number of plants of Laxton's Open Air and Sutton's Earliest of All, but it was a failure, owing to the season. I also potted a good many into the 6 and 8-inch pots, and with the treatment I have named they have done exceedingly well, both being good croppers, a fair size and early. For under glass I shall always grow them, because they are early and do not grow so strong as some other sorts, but it will be Sutton's that I shall prefer of the two for indoors. What the two varieties will do out of doors, the cold wet season prevented me from ascertaining. I had them planted against walls and the open ground, but in each case they failed. I think that too much root-room and feeding is a mistake, also growing the plants so fast. Ours were grown in cold frames as young plants, and no heat used after planting until the weather was so wet and cold. I have out-distanced in crop and health many of my neighbours who have much better accommodation, for such free growth has, in conjunction with the sunless season, led to failure.—W. D., *Solihull, Birmingham.*

—— The annual dinner of the Midland Counties and Birmingham Chrysanthemum Society was held on Tuesday evening, December 18th, in the Bell Hotel, Birmingham. After ample justice being done to the dinner provided, Mr. Latham, the Chairman, proposed the health of "The Queen," which was most loyally responded to. Mr. A. Outram proposed "The Society," and spoke favourably of the same, stating it was one of the best managed shows in the provinces and a great credit to the City of Birmingham. The toast of "The Exhibitors" was responded to by Messrs. Cooper and Dyer. "The Officers of the Society" was proposed by Mr. Dyer, the same being responded to by Mr. Hughes, the Secretary, and Mr. Jones, the Treasurer, the former stating it was their intention next year to offer liberal prizes to induce the growers from a distance to compete. A subscription list was at once opened, and several guineas subscribed. We wish them every success in this their intention. Mr. Jones read a report of the financial condition of the Society. It was gratifying to hear the balance was on the right side. "The Nursery and Seed Trade" was proposed by Mr. Cooper and responded to by Messrs. Pope and Spinks. "The Promoters of the Society" was responded to by Messrs. Gilbert and Lea, who were amongst the first to start this progressive Society upwards of thirty years ago. The toast of "The Visitors" was responded to by Messrs. Petch of Worcester and Mr. Sydenham. Mr. Crook proposed "The Chairman and Vice-Chairman," both of whom responded. The evening was a most enjoyable one, and some good singing was rendered by some of the company present, of whom there were upwards of fifty, including many from a distance.

—— In the address of the President at the anniversary meeting of the Royal Society, the following reference was made to Sir F. von Mueller :—"A Royal medal has been awarded to Sir Ferdinand von Mueller for his long services in Australian exploration, and for his investigations of the flora of the Australian continent. For more than forty years von Mueller has been working, without intermission, at scientific botany and its practical illustrations. As a botanical traveller and collector he has, to quote the words of Sir Joseph Hooker, 'personally explored more of the Australian continent than any other botanist except Allan Cunningham.' No one has investigated the Australian flora and the geographical distribution of its components with so much perseverance and success, and no one has enriched our herbaria, laboratories, and gardens with materials for study to so great an extent. The eleven volumes of the 'Fragmenta Phytographiæ Australiæ' contain the descriptions of a great series of new plants, and the unrestricted communication of his collections and observations to the late Mr. Bentham rendered possible the preparation of the 'Flora Australiensis,' in seven volumes, the only account of the vegetation of any large continental area which has at present been completed. He has especially devoted himself to the elucidation of the most difficult though most characteristic groups of the Australian flora ; and as a result of his labours in this direction his 'Eucalyptographia' may be more particularly mentioned, a work which will always be the standard of nomenclature for the intricate genus Eucalyptus. Of a similar character are his descriptions and illustrations of the 'Myoporineous Plants of Australia,' and his 'Iconography of the Genus Acacia.' To him is also due the foundation of the Government Herbarium at Melbourne, the first great botanical collection formed in the southern hemisphere, and the future centre of all scientific work on the Australasian flora."

—— The Earl of Meath, writing in one of the daily papers, calls attention to the proposed Vauxhall Park as follows :—"The part of Lambeth in which it is proposed to preserve these eight acres of land is one of the most densely populated localities of the metropolis, and there is not, with the exception of Kennington Park, any open space within two miles. The proposal was initiated some two years ago for securing these lands as an open space, but the pecuniary difficulty which invariably occurs in such cases presented itself with very great force on this occasion owing to the high value which property in this locality commands. Without going into details, it is sufficient to state that the Committee which was formed, after having overcome almost insuperable difficulties, obtained an Act of Parliament last session enabling the Vestry, the Metropolitan Board of Works, and the Charity Commissioners, out of the City of London Parochial Charity funds, to contribute towards the expenses of acquiring the land, and both the Kyrle Society and the Metropolitan Public Gardens Association have associated themselves with the scheme. An agreement has been come to with the owner for the acquisition of the land for £43,500, which, with attendant expenses, raises the sum required to £45,400. After deducting the amount to be obtained from the sources named and the subscriptions already received, a balance will remain of about £7000 still to be provided. I would therefore, as Chairman of the Metropolitan Public Gardens Association, invite the many friends of the open space movement and those who have not long returned from their annual autumn holiday to assist in providing what is after all but a poor substitute for Scotland, Wales, or Switzerland, or the beautiful English country side, for the poor toilers of Lambeth. Donations may be sent to the office of the Association, 83, Lancaster Gate, W."

—— Strawberry Culture in the United States.—An American paper relates that a young man named Wilson twenty years ago bought 13½ acres of land west of Centralia, Illinois, and set out Strawberry plants. These then were almost as much a rarity as a four-leaved Clover, and the people thought the man crazy and nicknamed him "Strawberry" Wilson. But this was the beginning of an industry which has since loaded 190 carloads (2,097,600 quarts) in a season of twenty days, and once 25 carloads in one day, bringing to Centralia from 125,000 dollars to 150,000 dollars, and paying out to pickers 55,000 dollars. A carload is 460 crates of 24 quarts each. Growers who have had experience in other places find in the soil about Centralia and the climate peculiar advantages for the Strawberry ; the only problem is the market, and improved shipping cars are widening the latter. About 2000 acres are planted ; the largest patch is of 30 acres, but the smaller ones pay best. From one-eleventh of an acre 1040 quarts were picked, selling for 104 dollars. A young lady, from 16 square rods, sold 560 quarts, besides supplying the family table. Nearly all the back yards in Centralia thus bring in pocket money. The Crescent, Minor's Prolific, and Warfield are leading berries with large growers. Two crops are taken from a planting. Sunday berry picking is on the decline, as growers have found that their fields can be left from Saturday noon to Monday morning without danger. Mr. Townsend, who employs 475 pickers, has done no Sunday picking for five years. Thinking their crates cost too much, the Centralia growers this year formed an association to manufacture them, using a large brick skating rink for the purpose. When the rush came, 57,000 crates with their boxes were ready, costing 12½ cents instead of 18 cents, and as about 120,000 crates are used, the saving was 6000 dollars. Poplar strips from Tennessee are used for the boxes, and an expert will turn off 72,000 daily, tacking by machine.

—— A paper by Mr. Colchester Wemyss was read at a meeting of Fruit Growers in Gloucester recently, which we reproduced on page 519. In the course of a discussion subsequently Mr. Campbell made some interesting remarks, of which the substance is here given. He said that for many years he farmed in Cheshire, and then travelled on the Continent, living for many years in France. Following the advice of a paper by Mr. Charles Whitehead he determined that if ever he came back to England he would start fruit growing, and his lot in life had led him to be near Ross, in Herefordshire, where he had a place admirably suited for fruit growing, and a good climate, which they found sometimes was a little too dry. One of his first experiments was to plant Plums, in addition to Apples and Pears. He planted an acre of Victoria Plums, having 680 trees to the acre and giving them a space of 8 feet. He planted them about five years ago, and he would now tell what they had done for him up to the present time. They must bear in mind he had everything in his favour. He had a good and competent gardener, and they took the utmost pains in grading their fruit. They

did not send their fruit to market packed higgledy-piggledy, and he had sent fruit to market so carefully packed that the dealer had written saying it was not necessary to take such trouble in packing it, but they might depend upon it it was. The first year he got a crop of 13 cwt., the second year he doubled it, last year he got 4 tons, and this year between 4 and 5 tons. As to the market being glutted, it was not by high class produce but by inferior fruits. If they planted a first-class Plum, Pear, or Apple, and took pains with it, they would never have a glut. This year he had made something like £50 for his acre of trees, which followed on rather more than £40 last year. He hoped he should be able to tell them on some future occasion he got £120 an acre, which Mr. Bunyard said they ought to get. In reply to questions, Mr. Campbell said his Plums were entirely Victorias, and there had been comparatively few deaths of his trees. He made one great mistake through iguorance of his land, by not draining it, and one day he found it waterlogged from the water off the hill above, but now it was drained his trees were going on all right. He fixed on Victorias simply because they were the most marketable. They were eating and preserving Plums, though in some markets he agreed they would not sell. In Evesham they would prefer the prolific sort. He obtained 3s. 9d. for 24 lbs. of his own Plums in Leominster market. He sent the whole of it away, having no refuse. His fruit was pretty much the same quality and size. One learnt a great deal by experience, and it was his intention next year to take all the bad fruit from every tree—he had some 5000 or 6000 trees—and thus throw all the strength of the tree into the remainder of the fruit, and when market time came he should absolutely have not a single fruit to throw away.

—— Following on the same subject Sir W. Wedderburn said they had two enemies to deal with ; one was the foreign competitor, and the other was the home distributor. Therefore they must see what they could do themselves ; they must not lie down in a feeble way and allow themselves to be ridden over. Co-operation was the best means of coping with these two enemies, and he therefore proposed, "That it is desirable to form a local association to aid the home grower of orchard and garden produce in competing with the foreign producer both in the home and the foreign markets ; and that the co-operation of those interested in horticulture be invited in order that practical and detailed information may be supplied to local producers as to the best and most profitable methods of raising and selling choice varieties of fruit, vegetables, and flowers, and getting them to market." The foreigner chiefly got the better of the home producer by raising early things and very choice varieties. Still we saw quantities of produce brought from the Channel Islands and France which might be produced here, and he believed the English article would fetch a price 20 per cent. higher than that of the foreigners. A good deal had been said against the middleman, but they must remember that if he was given a great deal of ungraded, miscellaneous, and untrustworthy produce, which he had to grade, find a market for, and take the risk of loss, he must be expected to take the profit. If information as to markets were disseminated, they might, by working together, take over all those profits taken by middlemen. The general objects of such an association would be by public meetings and conferences to bring together practical men, and get good opinions and information. Detailed and practical information with regard to special subjects might be disseminated by means of leaflets, and an experienced horticulturist might be engaged to go about from one district to another communicating the methods and practices which had been found most successful to the fruit growers."

SEEDLINGS OF SUGAR CANE AT BARBADOS.

The Sugar Cane (Saccharum officinarum, *L.*) is one of the most valuable economic plants we possess. It has been cultivated for so long a period that the primitive habitat of the species, according to De Candolle, is unknown—("Origin of Cultivated Plants," 1884, p. 755). Bentham in "Flora of Hong Kong," p. 420, states that "We have no authentic record of any really wild station of the common Sugar Cane." Further than this, in common with many plants that have been for a long time under cultivation and reproduced solely by means of buds and suckers, the Sugar Cane so rarely produces mature fruits that no one, as far as we are aware, has ever seen them. Certainly in the rich Herbarium at Kew there are no seed-bearing specimens. In botanical works the subject is often referred to, but apparently only to restate the fact that botanists like McFadyen in the West Indies and Roxburgh in India "have never seen the seeds of the Sugar Cane."—("Hooker's Botanical Miscellany," 1830, vol. i., p. 95, tab. 26).

Schacht is one of the few persons who has given a good analysis of the flower of the Sugar Cane including the pistil ; he also had not seen the ripe seed.

In discussing the problem how far the saccharine qualities of the Sugar Cane could be improved on the same lines as those so successfully adopted with regard to the Beet, it was lately pointed out in a letter addressed to the Colonial Office that, owing to the power of producing fertile seeds having apparently been lost by the Sugar Cane, it was impracticable to deal with it by means of cross fertilisation, or by the ordinary course of seminal selection. It was further pointed out that new and improved varieties amongst Sugar Canes were to be looked for amongst bud variations, and planters were advised to mark any canes that showed a departure from the type and cultivate them separately for experimental purposes, with a view to test their yield in sugar. Attention having thus been directed to the subject by official notices published in sugar-producing colonies, several communications have been received at Kew from persons who believed that they were able to afford some information on the point whether the Sugar Cane produces seed or not.

First, as regards the actual seeds of the Sugar Cane. A correspondent at Fiji, in forwarding a small packet to Kew in April last, stated, "Some time ago there was published in the Government Gazette of this colony an extract from a letter from you in reference to Sugar Cane seed. I have been eighteen years in sugar-producing countries, and have never observed Sugar Cane seed until within the last month, when one of my sons brought me a head fully ripened from a garden in my neighbourhood. Some time afterwards I went to see the sort of cane from which the seed had been gathered, but the plant was dug up and I could only learn that it was a purplish cane." The seed sent by this correspondent proved not to be the seed of a Saccharum at all ; it was the seed of a Sorghum, and probably of S. vulgare, the common Millet or Guinea Corn.

Recently, however, a statement has reached Kew, from a trustworthy source, that seedling Sugar Canes had been found at Barbados, and that plants were in course of being raised at the botanical station in that island, under the care of Professor Harrison and Mr. Bovell. Mr. J. B. Harrison is Island professor of chemistry and agricultural science at Barbados, and in conjunction with Mr. T. R. Bovell, who is superintendent of Dodd's Reformatory, he has been engaged for the last three years in cultural and chemical experiments with various kinds of Sugar Canes. The results of these experiments have been published officially by the Government of Barbados, and afford data of a valuable character as regards the effects of manurial constituents applied to Sugar Canes, as also the relative merits of new and old varieties of canes now under cultivation in the West Indies.

The statement sent by Professor Harrison appears to prove, in a perfectly natural and circumstantial manner, that a few mature seeds may occasionally be produced by the Sugar Cane under certain circumstances. It is stated by Rumphius that the Sugar Cane "never produces flowers or fruit unless it has remained several years in a stony place." He does not, however, say whether he ever saw the fruit, nor does he cite any proof of the fact in the shape of seedlings, self-sown or otherwise. The canes that would be likely to produce fruit would be those varieties nearest to the original wild cane, and probably on that account they would be less rich in sugar than the canes improved by a long course of cultivation. Without expressing a decided opinion on the subject, and in the absence of the specimens themselves, the information supplied by Prof. Harrison is, so far, the most tangible of any yet received to show that the cultivated Sugar Cane may occasionally produce mature fruits.

"On certain of the higher districts of the island from time to time growths of Sugar Cane resembling fine grass have been noticed, but in most cases no attempts have been made to cultivate them. Mr. Parris some years ago succeeded in raising a few canes from the cane arrow or flowering shoot. Mr. Clarke did the same with the arrow of the purple transparent cane, but did not succeed in getting the seedlings to flourish, and my wife's father many years ago succeeded in getting the arrows to produce young canes, but not in cultivating them. Knowing these cases, Mr. Bovell and myself considered that a favourable opportunity of examining into this question offered itself during the cultivation of the varieties of canes which we have here. These canes were planted in rows of four broad by 25 feet deep, and so as to have two sets of each kind, in all 36 plots of 18 varieties, planted side by side. The plots were noticeable this year for the number of arrows sent up by some of the varieties. We gave strict orders to the labourers employed in weeding and watching the adjacent land to report to us any grasses springing up upon them in any way differing from the usual weeds. Towards the end of January they reported to us that a few tufts of grass different to the usual kinds were making their appearance. We found these to be growing in a rather narrow belt of the field on one side of the plots and in a little below it, following the direction of the prevailing wind. They were found not only on the surface of the field, but also on the bottom of a drain which had been dug in the field to a depth of 18 inches. Some eighty or ninety plants sprang up at intervals afterwards. We found a good deal of difficulty in keeping them alive, as the sun quickly shrivelled them up ; it was necessary to protect them in many cases from the direct rays of the sun and to keep them constantly watered. In this way we succeeded in saving some sixty-four or sixty-five plants. Of these we carefully examined three or four so as to ascertain as far as we could the absence of any particles of old cane in them. Their mode of growth was quite different to that of canes growing from the eyes of canes. Sixty plants were successfully transplanted, and are being cultivated. At present they are not far enough advanced in their growth to

speak with certainty, but there appears to be amongst them several different kinds, probably five or six at the least. If you think it worth while, Mr. Bovell and myself will send you a specimen cane of each sort in January or February next, when they will be sufficiently far advanced to show their characteristics. The way in which they first grow is quite sufficient to account for them not being often noticed upon the fields. The weather here during January last was particularly favourable for their growth, and the fact of different varieties being grown side by side is, of course, much more favourable for the production of seed than the growth of one variety only. I have never heard of the Bourbon cane producing here fertile arrows; in all the alleged cases of fertility the arrows were either those of the purple or white transparent varieties which, as you are aware, are prone to variation. We shall again attempt this year to obtain the same results. I am anxious to have the benefit of your opinion upon this year's results, as of course, if we can establish the fact of the cane occasionally, and, under certain favourable conditions, producing fertile seed, it will open an important field of investigation.—J. B. HARRISON, *Government Laboratory, Barbados, 17th September, 1888.*"—(*Kew Bulletin.*)

SKIMMIA FOREMANNI.

WHAT are popularly known as "Berried Plants" are always valued for decorative purposes, and this is particularly the case when the berries are of a bright colour, freely produced, and long lasting. At the Royal Horticultural Society's meeting on December 11th last Mr. Foreman, Eskbank Nursery, Midlothian, exhibited a Skimmia under the name given above, which was said to have been raised at Eskbank from seeds obtained by crossing S. oblata with S. fragrans, and so attractive was the plant with distinctive characters well marked, that a first class certificate was awarded. The leaves are dark green, of oval form, the bright scarlet berries being produced freely in large bunches, and they are described as remaining on the plant for a considerable time, some being retained for two years. The plant is of sturdy compact habit and very hardy, for Mr. Foreman says it has been exposed to 32° of frost without injury.



FIG. 66.—SKIMMIA FOREMANNI.

CHRYSANTHEMUMS

REVIEW OF THE PAST SEASON.

Having had opportunities of seeing Chrysanthemums in various parts of the country during the last five weeks a few notes on this subject may not be wholly uninteresting now that the exhibitions are over and when intending cultivators for next year are considering how difficulties may be overcome and pleasures afforded by a better knowledge of the many requirements of the Chrysanthemum in our fickle English climate. It cannot be said that this has been a good year for the production of high-class blooms in any section, but there have been plenty in number to provide rich treats for the ever-increasing Chrysanthemum-loving public. The season has been on the whole a bad one for growers, though it did not entail so much work in procuring and applying water to the plants as that of 1887; indeed the excessive supply this year caused great anxiety, and it was not pleasant to anticipate the consequences. I have long thought that to produce Chrysanthemums in the finest condition entails more incessant care and anxiety in the multifarious details of culture than in the case of any other plants, and that the best efforts are sometimes rendered nugatory by the weather.

No sooner are the plants in flower than attention must be directed to the next season in carefully selecting new varieties, determining their merits and looking for faults in every conceivable form, so that space is not uselessly occupied and labour wasted on inferior varieties. Choosing the best is the commencement of the coming year's programme. The next step is the preparation of the plants for obtaining the necessary cuttings, which will eventually be expected to produce winning blooms another year; but I fear I am digressing from the text somewhat.

As before stated this has been on the whole a bad season—a sunless spring, a cold May, a wet June, and a wetter July, accompanied with cold days and nights, the thermometer falling as low as 42° during one night in June. This kind of weather was bad for the plants which had just been transferred to their final pots, causing a serious check to root-action and injuring the foliage, the plants receiving far too much water before the roots had time to take hold of the new soil; and this was not improved by being continually washed. July was even worse than June, rain falling in such abundance that some collections of plants hardly required water artificially for three weeks at a spell, and the temperature fell as low as 39°, while on several occasions it was below 45°.

The incurved blooms generally have lacked that depth and symmetry of form so pleasing to the cultivator. There have been too many loose open blooms and small petals in the centres owing to the non-maturation of the wood, the plants not being equal to finishing the blooms in the important point called "filling up." There has been a considerable tendency on the part of some varieties, notably Alfred Salter and Golden Queen of England, to unfold the lower half of the flowers satisfactorily, the remaining florets coming reflexed, thus preventing the blooms becoming perfect specimens of their respective varieties. Many blooms, not only among the Queen type but others, showed cross centres, or several centres, consequently quite useless for exhibition. Many varieties showed a want of substance in the petals, causing them to stand erect instead of incurving, hence so much roughness and want of finish. Flat blooms have been common, especially among the Queens, owing to the centre petals in some instances refusing to unfold properly, and removing these bad centres reduces the depth of the blooms.

From about the 6th to the 12th of November the best blooms were generally seen, the weather at that time being drier, consequently few blooms had been lost through the damping of the florets. During this period the National Exhibition was held, which I should think was the best yet held by the Society. The leading stands of incurved were very massive, yet many blooms lacked high finish. This was through no fault of the exhibitors, who had done their best, and done well, to combat the unfavourable weather influences. I do not consider that the best Japanese blooms were equal to those of last year in quality, speaking in a general way. Although some very fine examples were staged many were thin and showed a want of solidity and substance of the petals. But taking the whole exhibit of Japanese blooms I consider they were remarkably good when the unfavourable weather of the past summer is taken into consideration. With one exception I consider the blooms in both sections—the incurved especially—as staged in the northern counties a long way below those staged in the south in point of merit, owing to the fact that the north has not been so favourable as even the south this season for high class blooms. In very few exhibitions in the north could be seen a really good stand of incurved blooms. Roughness was very apparent and hollow centres numerous, and many "big" blooms lost points on close examination. I never saw blooms staged in the reflexed section in such poor condition as they have been this season. I cannot say that I have seen a first rate stand anywhere. There have been a few individual specimens that might be called good, but the same stands contained faulty examples. This section especially seems to have seriously felt the adverse influences of the season. Especially were the blooms wanting in depth and closeness or firmness, also in colour, even Cullingfordi and King of Crimsons being lacking in richness. I fear in the rage for after large fanciful varieties of Japanese the true reflexed section is liable to be somewhat neglected, as the blooms are less showy than the others named. Seldom do we see the plants this section placed in the best position out of doors, therefore cultivators have themselves a little to blame for the great falling off in the quality of the specimens.

Anemone flowers of both races have suffered also, but not to the same extent as the reflexed. I think the Japanese forms have not been favoured quite so much as have their older brethren the large-flowered Anemone so-called, some of the former lacking so much in the centre as to make it difficult to say whether they belonged to the Anemone section or to the ordinary Japanese. In point of colour there has been much falling off in the Anemone Japanese, also many "washy" blooms having been staged.

Pompons have been staged remarkably well at some shows, especially at the Aquarium, Portsmouth, and Brighton, the blooms being full, well coloured, and of large size. In fact, so large were some of them that it almost becomes a difficult matter to say where the Pompons leave off and the reflexed begin, so near do the former approach the latter in size and appearance. In the north this family has not as yet received much attention. At Liverpool they were especially poor both in quality and "setting up," being placed much too low on the stands, not showing sufficient foliage, which enhances their appearance wonderfully. Anemone Pompons have not been so good in quality as the ordinary Pompon, the centres in many instances being but poorly developed. At only one Exhibition have I seen stands of fimbriated or single varieties—Portsmouth. It is a pity they are not more encouraged, especially the latter type, so light and graceful are they for the decoration of vases either alone or mixed with other flowers. If societies were to offer prizes for them more generally there would quickly be some shown, and the taste for this section would spread, much to the advantage of exhibitions and to those persons who grow only for home decoration. —E. Molyneux.

CHRYSANTHEMUMS IN AMERICA.

Writing on the cultivation of Chrysanthemums in America, Mr. John Thorpe remarks in the *American Garden*:—It is not saying too much to state that there are more than twice as many Chrysanthemums being grown this year than there were in 1887. Not less than a million of plants were sold by the florists of America last spring, and if there is no mistake in my calculation there will be still more sold another year. To those who, from prejudice or a commercial standpoint, have frequently said the past four years, "Well, this is the last year of the Chrysanthemum craze," let me say that not until the Hyacinth and Tulip, the Hepatica and Violet are discarded or unwelcomed in the spring, will the Chrysanthemum be unpopular. For supplying the markets with cut flowers, as much attention is given Chrysanthemums by many growers as is given to the cultivation of the Rose.

A DISCUSSION ON THE CHRYSANTHEMUM.

At the December monthly meeting of the Sheffield Floral and Horticultural Society, a most interesting discussion took place upon the Chrysanthemum. Mr. W. K. Woodcock had originally promised to give a paper on "Some New Varieties of Chrysanthemums," but having left the town he was unable to do so. However, a good substitute for Mr. Woodcock was found in Mr. John Farrow, gardener to F. Mappin, Esq., Birchlands, Ranmoor, to lead off the discussion.

Mr. Farrow hoped that the present arrangement would be both instructive and interesting, for no doubt many different ideas and practices would be exchanged. No one could deny that the Chrysanthemum is a most beautiful and interesting flower and well repays the cultivator for the trouble taken. There is no flower that has risen to such a high state of cultivation during the last ten or fifteen years. The Chrysanthemum supplies us with flowers of beauty and usefulness just at the time of the year when flowers are not very plentiful, in fact he did not know what we should do without them to meet the present demand for flowers. But how many failed to obtain high class blooms by certain small and simple errors. He had heard many individuals say, "Oh, the Chrysanthemum is easy enough to grow." They were right to a certain extent, but how often do we see the same people when they try to obtain blooms of superior quality completely fail. He had found by experience that the Chrysanthemum required skill, carefulness, and judgment together with a large amount of study to grow it well; and those who wished to excel ought to be thoroughly acquainted with each variety, as some varieties require different treatment from others.

One of the first points of importance is the time of striking the cuttings, as this has a great influence on the bud taking, often causing some varieties to be late or much too early. It also causes the cutting in some cases to form flower buds instead of growth. He found the best time for inserting the cuttings in this locality to be from the last week in November to the first week in January for the production of high-class blooms. He rooted his cuttings in a cool frame with a little bottom heat, afterwards growing them on in cold frames protected from the frost, and when the weather permits placed them outside. The next point of importance is the final potting. He considered all

should be potted by the end of the first week in June, for if it be driven later it interferes with the ripening of the wood. The next important point is the soil for potting. He used three parts good pasture loam and one part leaf mould, with burnt ashes and charcoal. He did not like to pot in too rich a mixture, but to feed the plants as they required it during the season. He claimed that the advantages gained by this system were that he had a full acquaintance with their requirements, and was not so liable to make mistakes by overfeeding. The next consideration was potting the plants firmly. The soil must be rammed well and made firm, leaving it just so that the water will penetrate through. If not potted firm enough the wood will be unripe and unfit to build up the blooms, and imperfect blooms will be the result, as many have experienced this season. The next point of importance is watering. Some people imagine they cannot overwater the Chrysanthemum, but this is a great mistake. The Chrysanthemum requires plenty of water, but it should be given when needed. Great mistakes are made by letting the plants get dry, which causes checks in the growth, and blind flowers and disappointment often follow. With regard to the course to pursue in growing the plants for high-class blooms he believed in letting Nature take her own course with a few exceptions. He recommended striking the cuttings of early and late varieties at different times, believing that where time could be afforded it was a much superior plan to any other. How often did we hear it said, "I am afraid my so-and-so is too late or too early." He believed that, with certain exceptions over which we had no control, the Chrysanthemum could be had in bloom at any reasonable date.

The most important point of all is "taking" the bud. This requires great care, judgment and skill in it can only be gained by experience. If the buds are not retained at the right time for each variety it is useless to expect flowers of first-class quality. It is not the particular date on which the bud should be taken, but the state of each individual plant must be considered and the peculiarities of each variety thoroughly understood before success could be achieved. Japanese late varieties require their buds to be taken early; for instance, Boule d'Or, Meg Merrilies, Grandiflorum, Golden Dragon, and others about the middle of August. From his own observation and that of others he considered the best time to be generally from the 18th August to the 1st September, and if all other things were satisfactory he was sure success would follow. It was a mystery perhaps to some that when they took every care of a bud they found it did not swell and develope properly, and perhaps would not open. In his opinion this was caused by too strictly stopping the side growths, and thus, there being no course for the sap, the bud not being large enough to take it, a check to the plant follows, and the bud becomes useless. To remedy this evil he recommends that a growth or growths should be allowed to stay to take up the superfluous sap until the bud requires it.

Ripe wood is of great importance, for without it no high-class blooms can be expected. By the time the Chrysanthemums are in bloom the wood should be quite hard and brown, and the leaves should have a bronzy appearance. He had not seen many plants of this sort this season. The next and last point of importance was feeding the plants. There were many different systems of feeding and many kinds of manure employed. On this part of the subject he would say little, but let everyone follow the particular method he considered best. He believed from his own experience and that of others that the Chrysanthemum required feeding as soon as the roots were round the final pots, commencing with weak liquid and working up by degrees until the flowers are three parts open. He had proved this to be the best method by treating plants differently side by side.

Mr. H. BROOMHEAD thought he had found out a good deal this season. He was strongly against feeding the Chrysanthemum before the buds could be seen. The Chrysanthemum was not such a gormandiser as many people thought it was. He cautioned growers against putting their plants out too soon in May unless they had a very sheltered spot, because of the strong winds we had to contend with during that month. He preferred to put them out the first week in June. He also advocated getting them in early, and recommended all plants, whether early or late, to be housed by the 1st October. We were never safe from severe frosts after the beginning of October. With regard to setting the buds he thought it was not advisable to take every lateral away at first, but to do it by degrees, one or two now and then, and the grower would have better buds. He also recommended that weak varieties should be potted in smaller pots, leaving the soil rather looser; also that a lighter mixture should be used, consisting of half leaf mould and half turf pulled to pieces with the hand, riddled, and a shovelful of soft coke, about the size of peas, obtained from manufactories, and added to the compost. This would effectually prevent the soil becoming waterlogged, and the roots seemed to like these ashes and to cling to them. He also recommended syringing the plants the first week after the final potting instead of watering.

Mr. E. HOLLAND said that a failure generally brings success. He had failed this year in growing the Chrysanthemum, but he had found out where he had failed. His first failure was in the final potting. He had made the soil too solid before putting in his plant, and the result was the water would not pass through, and the roots refused to enter it. He had proved this by turning out a plant, and found that the roots had not worked in the bottom soil at all. He had also made his soil too rich. He had used turf, leaf mould, oyster shells, soot, and Beeson's manure. He found he had used too much soot, for when rain came the plants flagged and turned their tops down. He turned some out and repotted them, and they recovered. Mr. Holland asked the question whether in taking the bud and stripping off the laterals would it be better to commence at the bottom or the top of the shoot?

Mr. BROOMHEAD replied that the top of the shoots should be first cleared, or you would lose the bud altogether if a crown bud.

Mr. HOLLAND said that with regard to feeding, if potted in fairly rich soil they would carry through with little or no feeding. He thought they required something in the soil to get them to form good buds.

Mr. FARROW bore out what Mr. Holland said in regard to too rich a compost. He knew a grower who made the same mistake, but finding it out he shook out all his plants and repotted them, and finally took prizes.

Mr. BROOMHEAD said one of the most important things is top-dressing. About the beginning of August many roots near the surface of the soil get bare, and the sun injures them. A barrowful of good material should be in readiness, and any time when looking over the plants a little can be sprinkled over the surface, and every watering will carry nourishment down and new roots will form and gradually work to the top, when they can be top-dressed like the others. He advocated for the top-dressings bone dust, leaf mould, and manure all rubbed together, but being careful not to ram it. This top-dressing will carry the plants on until the buds show, and then give them a little light liquid, clear and thin. He also recommended that in very hot weather the pots should be shaded by boards.

Mr. COLLIER considered that many mistakes were made by potting in too rich a compost. It indueed a gross growth which at first delighted us, but in the end showed us that the plants could not get properly ripe. He was in favour of frequent top-dressings, as he considered they were the life of the plant. He top-dressed many kinds of plants with advantage. He did not advocate very early striking of the cuttings, but when a start was made it should be followed up and all checks to the plants avoided.

Mr. HOLLAND asked whether the Japanese required larger pots than the incurved?

Mr. BROOMHEAD considered a 9-inch pot was large enough for any plant. He used 8-inch, 8½, and 9-inch pots, and none any larger.

A vote of thanks was given to Mr. Farrow and all who took part in the discussion, and this interesting meeting concluded.—E. D. S.

ON OVER-SUPPLY OF GARDENERS.

[By Mr. J. Barry. Read at a meeting of "The Chiswick Gardeners' Mutual Improvement Association."]

GARDENING has been, and still is, undergoing great changes in this country. What will be its ultimate position? This would seem to be an important question well worthy of consideration. They, the "younger members," form part of that rising generation of gardeners, who in the fulness of time will succeed those who are now so worthily maintaining the supremacy of British horticulture. One word of advice here. They must, to be successful, march with the times. The subject of this paper may, for convenience sake, be grouped under two general headings—viz., Emigration and Selection. The latter term may at present seem somewhat ambiguous, its full purport will be seen later on. I take it that few will dispute the truth of this proposition—viz., that there are too many gardeners. One may also be reminded that while the market seems to be overstocked, really good gardeners are more in demand and more appreciated now than ever in the history of horticulture. The bane of present-day gardeners is their anxiety to be employed under glass—as has been well said, the horticulture, commercially considered, of the future will be gardening in the fields. The present demand is for all-round men, and a man who can grow anything, from Grapes and Tomatoes to Strawberries, Mushrooms, and Orchids, not forgetting Potatoes and Cabbages, hardy flowers, and trees and shrubs, is as sure as fate to succeed if he is sober and industrious. It is not my object to decry cultivation under glass—by this method we are enabled to enjoy at home the luxuriant and beautiful vegetation of the tropics—but often all the beauty of English gardening is not in the indoor but in the outdoor arrangements.

I think we must go back to some twenty or twenty-five years ago, a time of prosperity by leaps and bounds, when gardeners were manufactured, to understand aright the present times. In those days there was plenty of money spent, and consequently there were foremen and journeymen in quantity in various gardens. As times began to get bad foremen were dispensed with, then fewer journeymen were kept. Then, perhaps, a cheaper head gardener was wanted, and many a foreman has taken a head place at considerably less wages than the head gardener who was leaving had been receiving. I know of good head gardeners who have been out of place for three or more years, and yet they have testimonials which should carry them anywhere. The struggle for bread and cheese induces some men to take situations at any wages, and the desire to save a few pounds a year induces employers to offer low wages, and they find they can get a man, calling himself a gardener, on their own terms. Whether he really is a gardener or not it takes time to find out, and meanwhile the saving a little on his wages is the consolation to the employer. The wage question is, I know, a very sore one, and I will only allude to it briefly. Underpaying head gardeners is a bad policy. The feeling entertained by a good man ill paid is a desire to leave the service, and an intention to do so the first opportunity that offers. Compare the wages of a groom or a butler with the wages of some gardeners, and you have the best possible comment that could be offered on the question, but so long as the supply is

beyond the demand, so long will wages be low. This is the grand secret, if secret it be, why gardeners in many instances are not better paid than the "powdered" gentlemen to be found "standing at ease," or awfully busy doing nothing, in so many of the establishments in this country.

It has been well indicated by Mr. Ruskin, and other eminent writers, that there is probably no nobler task for human enterprise in the present day than that which is to be found in the great pioneer work of colonisation—the leading forth of the surplus thousands of the Old World to people the vast solitudes of the New, and the removal, as far as possible, of the rude natural obstacles which lie in their path to the establishment of happy homes and civilised conditions, such as their more favoured or more fortunate fellow-countrymen enjoy at home. It is being more and more recognised that this is not a work in which only Colonial Governments can render effective service, but one in which the strong incentives to individual genius, energy, and enterprise which may be afforded to the private capitalist, and the best organising and pioneering abilities that can be induced to engage in it should not be wanting. One remedy for the congested state of affairs in the gardening labour market would appear to be emigration. I know it will be urged that gardening as a profession is not overstocked with really good men, and that England will never have a surplus of masters of gardening, or with men who are capable of system and economy in the management of land, such as Gilbert, Douglas, Wildsmith, Roberts, Bedford, Coleman, Simpson, the Thompsons, and many others. But to my question. I have lately had a conversation with a gentleman well known in the horticultural world, who has spent a good many years in our colonies. It is twenty years since he left the colonies. At that time he states there were a good many wealthy gentlemen who had extensive gardens that required special attention. With the rapid growth of wealth in them this number must have largely increased, and the demand for gardeners must have grown in proportion. As to wages, these are invariably high compared to the sums paid in England. As to the suitability of the English gardener for the Colonies, it depends so much on the man and his special knowledge, together with his willingness to work—the latter a most essential condition to success. Gardeners and their abilities vary. The landscape or pleasure gardener, the fruit grower, and the market gardener are each of a different class, but there is invariably room for the two latter while the demand for the former is limited. In this gentleman's colonial days a gardener who was a good all-round man did not mind looking after a horse, while his wife would handle the family cow, turn out a decent bit of butter, and tend the fowls—wages £100 a year, with house and rations; and if they had two or three children that did not matter much. These were not looked upon, as at home, as encumbrances! They were all found in plenty of food—this has reference to Australia. Sir Charles Dilke, in his able work "Greater Britain," says with time and care Australia ought to be the vineyard of the world, and our neighbour, Mr. D. Morris, the assistant-director of the Royal Gardens, Kew, has written: "From these sunny lands, where our sons and daughters have made their homes, we shall draw our future supply of fruit, in quality and quantity probably exceeding that of any fruit industry the world has seen."

Having so far disposed of one remedy, I proceed briefly to consider the second. The great want of the present day seems to be a national and comprehensive School of Horticulture, in which we could train really competent men; men who, in the fulness of time, will adorn and not disgrace the profession. This is indeed a large subject. I can only within the limits of such a paper as this touch the question. Such a school should issue certificates of competency, granted by well-known thoroughly qualified and practical men to the candidates, and if employers really had at heart the best interests of horticulture they would only engage for their service such men as have passed successfully through the trying ordeal. The certificate from the National School of Horticulture should be the hall mark of merit; the "badge of honour" by which every gardener should be recognised and respected. This would indeed be carrying out the Darwinian maxim of the survival of the fittest. Perhaps a great—the great evil—of one of our present courses of procedure is the apprentice system (at best a bad system), particularly as it affects those serving short terms. At the end of the brief period of their apprenticeship, by the influence of their master, they obtain a situation in some garden, where, thoroughly ignorant of the very rudiments of their trade, they are a disgrace to themselves and often an annoyance to others, besides occupying the room of somebody who has obtained a good knowledge of his business, and through the avarice of some individual is supplanted by an ignoramus who can dig, rake, and hoe, and there his abilities stop.

Perhaps I have drawn a somewhat gloomy picture of the gardener's position in this country. There is, however, one bright speck in the horticultural sky; may it grow larger and larger, and illumine by its welcome radiance the heart of many a struggling blue apron. Fruit culture, gardening in the fields in this country, is coming to the front. With a reform in our land laws there is indeed a bright ray of hope for the gardener here. No doubt in the good time coming there will be a considerable extension of both fruit growing and market gardening in many parts of the country, which will create much employment for the cultivators of the soil. To sum up—there is evolution in horticulture as in all other things, and the gardener must change with the times, or give up his gardening and try something else. He must fit himself and do his best to meet the wishes of his employer, even to the sacrifice of a few of his own ideas and notions. Success in life, so far as a gentleman's gardener is concerned, is as much due to his ability in a social sense as to his skill in land culture, or in plant or fruit-growing. There is nowadays a growing desire to make land—gardens included—more profitable; and a new race of gardeners who will devote themselves to the solving of this problem will be bound to succeed. Some people say fruit culture will do it, but the same result will be gained in different ways in different places, and to find out some way of making land profitable is well within the gardener's province. His capital and skill may either be focussed under glass, or it may be more widely spread over a garden farm, but it is the gardener's business to do his best towards making his native land fruitful and profitable.

ASTER COMET.

During the present year we have seen several remarkably fine examples of this distinct and beautiful Aster, and we were much impressed with a stand of blooms at one of the autumn exhibitions. It has been



Fig. 67.—Aster Comet.

aptly compared to a Japanese Chrysanthemum with long flat florets slightly curling at the tips, but in colouring it is quite unique, white striped with bright pink, the latter colour being principally confined to the margins of the florets, somewhat in the style of Belle Paule Japanese Chrysanthemum. The illustration (fig. 67), for which we are indebted to Messrs. Sutton & Sons of Reading, appears in the issue of the above firm's "Amateurs' Guide in Horticulture" for 1889, an elegant and useful production, showing this year a still further improvement on previous efforts. The Aster as represented is tall but compact in habit, with large blooms terminating nearly every shoot.

CIDER.

A correspondent writing from Suffolk asks whether cider is an old drink or not, and if we can tell him how long it has been in regular consumption, adding that it is not made and seldom seen in the eastern counties. In searching for information on the subject we came across the following notes on "Cider and Cider Orchards in the Olden Time," which may, perhaps, interest others besides our East Anglian inquirer:—

Cider is now grown, to use a common expression, in great quantities in what is known as the cider country or cider counties. There the great part of the population drink nothing else. Devonshire,

parts of Somersetshire, Worcestershire, and Herefordshire are pre-eminently cider counties.

The early use of a drink called cider, and the production of such immense quantities of that beverage, such as that of 10,000 hogsheads in one parish—viz., Martock in Somersetshire—are two distinct matters.

Cider, without doubt, is of early origin, and is supposed to have been first known in Africa, as it is mentioned by Tertullian and Augustine, the two fathers. St. Jerome speaks of an inebriating liquor made of the juice of Apples.

Biscay, long famed for its cider, received it, as is believed, from the Carthagenians. A full description of this beverage is given by Navagerus, in the journal of his embassy to the Emperor Charles V.

The ancient Britons, like other northern nations, may have made an intoxicating liquor from the Sorbus, or Service Tree; and though hardly from the indigenous Crab Apple, yet some perhaps from the better kind of Apples introduced by the Romans. The Anglo-Saxons distinguished their "Eppelwin" from wine and mead.

The Normans probably obtained their cider Apple trees from Biscay; the climate and soil there both favoured their growth. To the abbeys of that country we must look for the improvement of Apples and cider-making.

Near Valognes, in the Department of La Manche, stood the famous abbey of Montebourg. The possessions of this abbey extended to Dorset and Devon. Besides lands in Axmouth parish in south-east Devon, the manor and church given in the reign of Henry II., there were also other lands, and a priory in Loders, near Bridport, Dorsetshire.

Cider was made on the Montebourg lands before the year 1286. The monks, who possessed nearly all the knowledge that prevailed at that era, had introduced upon their estates on this side the Channel Apple trees, for the growth of Apples for cider-making. They had also taught their tenants how to make cider according to the approved plan of Normandy, which is still preserved in that part of France, in the Norman islands of Guernsey and Jersey, and in Herefordshire.

W. Villata, of Loders and Bothenhampton, near Bridport, held land of the Abbot of Montebourg upon payment of 6s. a-year, and upon his finding a horse (*ad molendum poma*, &c.), to grind the Apples in what is now called a horse-mill.

The skilful monks may have done much towards the improvement of their estates by the introduction of better fruit trees. Probably others were not disposed to adopt novelties any more than their descendants in the present day.

The Quarantine Apple is supposed to be a corruption of Carentan Apple. Many other names are old names corrupted in the course of years. A periwinkle shell-fish is termed a *gobbet*. It is the Norman *gobet*, a mouthful, as the famous Cherries of the valley of Montmorency are now called *les bons gobets*.

That cider was made, as before related, in the twelfth century cannot be denied; but not to any great extent, if we institute a comparison with the great doings nowadays of cider-making Devon and Somerset.

The Vicar of Dawlish, in the South Hams (now a watering place), received, in 1280, one-half the crop of Apples, doubtless grown for making cider.

The word Orchard, or, as it is now pronounced, Orchat, perhaps a name given by the monks from *Orchatos*, has been a fruitful source of error. It was not in any sense the orchard of modern times. The latter is a space planted with Apple trees of greater or less extent, unlike the practice of Normandy and Brittany, where pasture and arable land are crossed by rows of Apple trees, and where the English practice of planting the trees in one spot with grass under them does not obtain.

The orchard of early reigns was a place laid out with trees, as a pleasure garden for walking, recreation, and sports, having arbours, and similar appropriate places. Such a spot, if Apple trees prevailed, was called an Apple garden or Apple orchard.

An Apple garden is spoken of in "Domesday Book" as existing at Nottingham. Horti and Hortuli are frequent in the same record.

The monks of Lewes Priory, Sussex, had in their enclosure of thirty-two acres and a half within walls a paradise (park), a garden, and an Apple orchard, which felt the effects of a gale, A.D. 1267.

There were ardent lovers of horticulture among the clergy. Upon the extension of a part of Wells Cathedral about the year 1326, there was a special provision made for the careful preservation of a certain Medlar tree. Quinces sold in 1292 at 4s. the 100.

Wycliffe knew of the strength of cider, for he translated the passage, Luke i. 15, "He shal be gret bifore the Lord, and he schal not drynke wyne ne sider."

One Cottingham, of Seaford, gave a bond, 26th Elizabeth, that while he should continue a tippler he and his household should be orderly, and keep no unlawful games or evil rule within his house, garden, or orchards during the said time of his tippling—*i.e.*, dealing in liquor. In the orchard was doubtless the skittle-alley for summer days.

Butler, in his "Hudibras," gives among other acquirements of Sidrophel that he knew—

"And in what sign best sider's made."

So that in the reign of Charles II,, not only was attention paid to the growth of the Apple, but to the making of this fruit into cider—an operation of importance enough to be referred to an astrologer, then a common practice.

Apple trees and Pear trees also began to be much cultivated about the middle of the seventeenth century. In a pamphlet addressed to the well-known Samuel Hartlib, Esq., A.D. 1657, entitled "Herefordshire Orchards, a Pattern for all England," it is asserted that Gennet-moyles bear every other year, and make the best cider. Mordicant, or sharp cider, pleased the peasant or working man, as was the case in France.

In Herefordshire few cottagers, and even few of the wealthiest yeomen, taste any other drink in the family but cider, except at some special festivals twice or thrice in a year, and that for variety rather than for choice.

The credit of cider had of late years much advanced in the estimation of the best gentry, who had sought out the right method of ripening and hoarding the choicest fruits, and some also of bottling it.

"But I am confident," the writer adds, "that much more may be added to the perfection of it, when they shall also apply to it the due subtleties of the mysterious art of fermentation."

Each cultivator bestowed greater attention, having proved that—

"Else false hopes
He cherishes, nor will his fruit expect
Th' autumnal season but in summer's pride,
When other orchats smile abortive fail."

PHILIPS, *Cider*, Book i.

Wassailing the orchards on New Year's Eve is called in Sussex and those parts "Apple Howling" from the words used:—

"Stand fast, root; bear well, top;
Pray the God send us a good howling crop," &c.

Hence the entries in former centuries of money given to the "howling boys" may be understood.

Hooker, in his MS. survey, records that the Apple was cultivated in Devonshire so early as 1520. He must mean begun to be grown for the purposes of cider. He continues, "but in the beginning of the following century it received more attention."

So long as the narrow lanes served to keep up the communication between the principal towns, and pack-horses did all the work, there being no carts, how could cider in hogsheads have been sent about the country? It could not have been sent to any great distance.

The absence of the mention of cider up to a certain period in borough archives is very remarkable. In accompts, where every halfpenny is carefully set down; in dinners of the most homely kind, and feasts, such as the Cobb Ale at Lyme, and the feast at Ford House; in a dinner to Charles I., altogether (for the country) very sumptuous up to this period referred to, and which required to be specified, there is no mention of cider; then cider takes its place with ale and beer, and furnishes an item in every accompt for refreshment or festive enjoyment at table of the inhabitants of boroughs.

In the detailed presentments of the Hustings' Book for Lyme for the year 1597, of the stealers of wood and pollers of trees for fuel, appears this entry:—

Item, they present George Browne's son, Hoode's son, and Thomas Sampford's boy to break into men's orchards and steal Apples.

Whether these were Apples for the table or for cider matters little after what has been written above, as no cider is mentioned in the archives for 110 years.

In 1629, Apples were cultivated in Massachusetts from seed imported from England by order of the Governor and Company of the colony. Governor's Island, in Boston harbour, was given to Governor Winthrop in 1632 on condition that he should plant an orchard upon it.

A hogshead of Somersetshire cider was brought to Mr. Richards, near Dorchester, A.D. 1699, upon the occasion of England and Scotland being united into one kingdom; a hogshead of cider was given by the Corporation of Lyme to the soldiers at a cost of 25s.

Wine, beer, and cider were given away at Minchinhampton upon the accession of King George in 1714.

In 1745-6 the accompt of Robert Henley, Esq., Mayor of Lyme, exhibits:—

April 28. Two hogsheads of cider supplied to the populace on the association (to support his Majesty George II.), and on the victory obtained over the rebels, £2.

The Mayor purchased this cider at Pinney Farm, of Walter Oke, a country gentleman who farmed his own land, and had planted some of the now far-famed Cleeveland, late Pinney-under-Cliff, with Apple trees.

The farmers of the Somersetshire parishes near Sedgemoor, so soon as they heard that the king's forces had won the battle and defeated the Monmouth men, sent hogsheads of cider to the victors. The price of a hogshead of cider given away at Axminster in 1689 was 17s. 6d.

The excellence of the cider made throughout the breadth of the cider-growing west is very great; the quantity is enormous. Some localities which have a good name for their cider send out much more cider than is produced therein, like in wine countries, so much does man resemble man in all countries and ages. The growers in the localities in question buy Norman Apples at a cheap rate and mix them with their own fruit.

Some gentlemen, travelling from Strasbourg to Freyburg, stopped at the village of Altenheim, in Baden, at an inn kept by a respectable man who farmed his own estate of 100 acres. Perceiving how loaded the trees of this orchard were, the English gentlemen spoke of the great crop of Apples and of cider. The German informed them that no cider was made in that country; the juice was mixed with the juice of Grapes and made into wine!—(*Roberts's Social History of the Southern Counties.*)

FRUIT CULTURE IN CALIFORNIA.

(*Continued from page 569.*)

While Europe, Asia, and some of the United States can grow one or two of their fruits, there is no spot on the globe where they can all be grown to such perfection as in California. It has been demonstrated both by theory and practice that the demand for our fruit products can never be fully met; that the market will never be so fully supplied as to render the prices unremunerative to the producer. With the large acreage of fruit trees now in bearing the entire product is consumed by a very small fraction of the population of the United States. Practically the supply is exhausted before it gets further east than the Mississippi. Last winter more than 2000 eastern people visited the rooms of the Board of Trade in San Jose. They represented every State in the Union, and of the entire number not one had ever seen a dried Apricot, one of the most luscious and healthful fruits that the earth produces. The Apricot crop for 1887 was probably double that of any previous year. Hundreds of acres of new orchard came into bearing, and the trees were loaded. Notwithstanding the enormous yield, prices were firm and exceedingly remunerative, netting the producer from 200 to 450 dollars per acre, while hundreds of eastern orders could not be filled. It has been estimated that all the Apricots raised in California would not furnish a saucerful each to the inhabitants of New York City. The variety of fruit that can be grown in Santa Cruz is infinite. Every plant that has been put into the soil and given reasonable care has thrived wonderfully and yielded abundantly. We have space but for a partial list.

Oranges and Lemons.—From the time the Catholic Fathers established their Mission at Santa Clara (more than a hundred years ago) it was demonstrated that Citrus fruits could be grown to advantage in this section. Orange trees were planted then, and have been planted since in almost every part of the county. The trees were grown more for ornament and family use than to supply a market, and no considerable groves were planted until about six years ago. The success attending these later plantings show that, if desirable, Santa Clara County could achieve as great a reputation for her Oranges as is enjoyed by Florida, Los Angeles, or the countries of the Mediterranean. At the Citrus fair, held in San Jose last winter, magnificent specimens of Oranges, Lemons, Limes, &c., were exhibited from 183 different localities in the county, and all were grown without irrigation. But while the yield of these fruits is large, it is not cousidered so safe or so profitable an industry as the growing of other varieties. Oranges must be marketed in a fresh state, and must come in competition with similar fruit from Florida and foreign countries. Freight rates on such articles are necessarily high, the risk of loss great, and the market temporary. Other fruits can be cured, and thus rendered as imperishable as Wheat or flour. They can be transported at leisure and can be put on the market at any time that the price suits the producer. The labour and expense of production is much less, while the profit is considerably greater than in Orange culture. It is for these reasons the fruit-growers of Santa Clara County have not gone extensively into the cultivation of Oranges, and not because we cannot grow them to perfection. To put it in a short form: There is not so much money in Oranges as in other fruits.

French Prunes.—All varieties of Prunes yield immense crops here. Of the eighty varieties grown for market experience has taught us that the French Prune is the most profitable. It is planted 108 trees to the acre, and yields a good crop in four years. Trees from six years old upwards give about 10 tons, or twenty thousand pounds, to the acre. The price ranges from a cent. and a half to two cents and a half per pound for the green fruit, making an average yield of from 300 to 500 dollars per acre. Twenty to twenty-five dollars per acre per year will pay all the expenses of the crop. If the fruit is cured before being marketed the profits are much larger. There is less labour and expense in growing the French Prune than any other fruit. While the cultivation of the soil is about the same the labour of pruning is considerably less, and of harvesting and curing not more than 10 per cent. that of other varieties. It has been estimated that the French Prune can be cured ready for market with as little labour as it can be hauled a distance of two miles. The Prunes grown in Santa Clara County are large, heavy in sugar, of exquisite flavour, and make a healthful food. Their merits have become known in the fruit markets of the east, and the demand is far ahead of the supply.

Apricots.—This delicious fruit finds its congenial home in Santa Clara County. It is a fruit that was comparatively little known until California horticulturists introduced it to this coast. Here the fruit of our best varieties measures from 6 to 9 inches in circumference, and is of such a delicate flavour that once tasted it is never forgotten. It is largely grown in this county and with great profit. The trees are planted 20 feet apart, giving about 108 to the acre. It yields a considerable crop the third year, which increases indefinitely as the trees become older. Some thirty-year-old trees in this county have borne 1800 lbs. of fruit to the tree. Five-year-old trees this year have given 200 lbs. of merchantable fruit, and have netted to the owner 3 dollars and upward per tree. Where the fruit has been cured the income has been much larger, reaching in many instances as high as 550 dollars per acre. In this fruit we have no competitors. No other country can grow Apricots in quantities sufficient to make any impression on the market.

Cherries.—This favourite fruit yields its best returns in this county, and our claim to the market is based on the fact that we can grow it to greater perfection than elsewhere, and get it to the eastern markets in advance of all other fruits. While it takes longer for a Cherry tree to come into full bearing than it does for Prunes or Apricots, the returns will amply compensate for the delay. The range in prices is from six to eight cents per pound, and the returns at these figures almost surpass belief. In a good season many of the older trees yield from 400 to 600 lbs. each, giving a return of from 1200 to 2000 dollars per acre. These, of course, are exceptional figures, but a safe average estimate would give us from 400 to 600 dollars per acre. That these are not fancy estimates is shown by the following incident:—When the San Jose and Almaden railroad was projected the route was surveyed through an orchard, and it was found necessary to remove a Cherry tree. After an impartial trial on the question of damages it was estimated that this tree was worth 600 dollars, and that amount was paid by the railroad company to the owner for the privilege of removing it. The decision was made on the ground that the tree had for a number of years yielded an anuual net income equal to 10 per cent. of 600 dollars.

Peaches.—Of this standard fruit Santa Clara County produces all the favourite varieties grown in the East, together with many new kinds which have been originated here. Unlike its relatives in the Eastern States, which, owing to cold winters and other causes, are short lived, having to be renewed, on an average, every four or five years, the Peach tree here attains an old age full of vigour. There are many trees in the county over thirty years old which have grown full crops nearly every season since they were three years old, and which last year made a growth of wood 11 feet in length. The trees come into bearing in three years from planting, while considerable crops at two years old is not an uuusual occurrence. The capacity of a Peach tree for bearing is only limited by its strength to hold up the weight. Each year many trees which have been carelessly pruned break down under their loads of fruit, while props have to be used in almost every orchard. The largest and best California Peaches found in Eastern markets, were grown in Santa Clara County. The profits from a Peach orchard are about the same as from Apricots. We have known of over 700 dollars to the acre being realised, but the average return is less. A good orchard of approved varieties will average about 300 dollars net per acre. The present season (1887), although there was an enormous crop, the fruit is in great demand at from three to three and a half cents per lb., being about 6 dollars per tree for six-year-old trees, or something more than 600 dollars per acre, and buyers are, at this writing, scouring the country for the fruit at these prices.

Pears.—This was the first California fruit to make its way across the continent and astonish Eastern people by its size, beauty and flavour. All of the choice varieties of the world have been transplanted to the orchards of the Santa Clara Valley, while our enterprising horticulturists have originated as many more. Many of the best Pears now in the market were first grown here, and several of them have been taken East and transplanted into orchards there. The fruit as grown here is particularly adapted to shipment. Being grown on vigorous trees, in a fertile soil, and in a climate free from moisture, they will keep in good condition and retain their flavour for several months. Pears from Santa Clara County stood on the table at the New Orleans Exposition during the entire Exhibition, without having to be renewed. Trees begin to bear at from three to four years from planting, but do not bear large crops until six or seven years old. The profit from them is about the same as from other fruits.

Olives.—This wonderful fruit, which is both bread and meat to the

people of certain countries, and which is yearly becoming more prized by the people of the whole world, deserves more than a passing mention. The more so, since the oldest and largest Olive orchard, outside of those planted by the Mission Fathers, is located in Santa Clara County.

(To be continued.)

ECONOMIC ENTOMOLOGY.

[Presidential address to the Highbury Microscopical Society, by Mr. James A. Forster.]

(*Concluded from page 525.*)

THE aphis is one of the main causes of Apples falling immature from the trees, and also largely affects the quality of the cider in certain seasons. This species is found all over the world. The Americans, however, claim that the pest was introduced in their orchards by trees brought from Europe. Another species very injurious to orchards is known as the woolly aphis, or American blight (Schizonema lanigera). Everyone who has closely noticed Apple trees will have frequently remarked knots or bunches of a downy or woolly substance on parts of the stems and in interstices of the bark. This is very frequently supposed to be a form of mildew, but if closely examined it will be found that this woolly substance covers little groups of aphides, all actively engaged in extracting the sap. This form is specially liable to attack newly pruned trees if the cutting has been done carelessly. Old and neglected orchards, of which there are too many, are the special home of this pest, the lichenous and moss-covered stems exactly suiting it and enabling it to remain unsuspected, while the trees attacked become after a time covered with swellings, checking leaf and blossom, and ultimately causing both stem and twigs to decay. This state is frequently called canker, and is attributed to any cause but the right one—the exhaustion brought about by the persistent suckings of myriads of larvæ.

I have dwelt much longer than I intended on the aphis ; but before I pass on to other of our insect troubles, I must say a word or two about the phylloxera (P. vastatrix), which, although not occurring in this country, has produced such wholesale destruction in the French vineyards, that its name has become known throughout the claret-drinking world. The phylloxera is a species of aphis of very small size, and somewhat different in form from the species known in this country. It first appeared in France about the year 1863 or 1864, and is supposed to have been brought from America. It attacked first the Gard district ; then rapidly spread to the south and west. Its minute size renders it almost indistinguishable without a glass, and its appearance is like a little powder adhering to the stem of the Vine. It is oval in form, is furnished with two vigorous antennæ, and has an articulated beak more than half the length of its body. This, when not in use, is folded against the lower side of the thorax, where it lies between the six little legs. Its body tapers somewhat towards the extremity. Their changes and metamorphoses are very similar to those already described. Towards the twentieth day of their life, on their attaining the adult stage, the abdomen enlarges on the sides, and four mamelons appear, and immediately after the insect lays a batch of eggs. Each female lays about thirty eggs in each batch, and as there are eight generations each year, the six months between April and November suffice to produce such a horde of the voracious creatures that more than half the vineyards of France have been destroyed by them. And even supposing means be found to extirpate them, it will require ten years for the mischief to be made good and the vineyards restored.

The evil caused to the Vine by the phylloxera is a complete draining of the sap from the stems. They attack only the main stems, which furnish them most abundantly with the nourishment they require. In spite of the attack of these countless living pumps, which work incessantly, the Vine stems continue a most rapid growth, more so than if in their normal and healthy state ; but they become yellow instead of white, then gradually pass to brown, the shrivelled bark serving as a lair for the phylloxera. As the evil continues, the bark becomes more and more folded and shrivelled, until at last it assumes a blackish tint and falls in a state of decay. The insects then abandon it to make fresh attacks on fresh Vines. Failing fresh plants, they attack the principal roots, destroying their outer coverings after penetrating well below the bark. When one root is annihilated, they work underground to another, occasionally coming on to the surface of the ground to hunt for healthy Vines.

If not easy of detection in the commencement, the phylloxera cannot be overlooked after a time. After a vineyard has been infested for two or three years, the stems attacked underground produce only a leaf here and there. These are small and malformed, and after languishing for a time turn yellow and roll up. The whole plant dwindles, the Grapes, arrested in their development, hardly form, the pips split up, all fructification disappears, the leaves get thinner and smaller than ever, and soon the vineyard presents the aspect of complete ruin. And ruin it is, for the only cure is the thorough burning of the old Vines.

Many remedies have been suggested, but I do not think any have been attended with much success. M. Dumas proposed the employment of a concentrated alkaline solution of sulphate of potassium, or soda, and the ammoniacal sulphate produced in gas works. It is believed that this, if carefully used, would be efficacious, as the phylloxera would be poisoned and the Vines probably much benefited and strengthened by this chemical manure, but one important difficulty arose—viz., the question of expense, which is prohibitory.

Monsieur Bazille of Montpellier is stated to have employed with success a dressing composed of cow's urine, an alkaline sulphate, and one tenth of oil or tar. I, however, think the true and practicable preventive for the attacks of the phylloxera has yet to be discovered, and considering the immense interests at stake, such a discovery would be well worth making, and the discoverer would deserve well of France and the world.

The chief natural enemies of the aphis family are found among the beetles (Coleoptera), one family of which, the lady birds (Coccinellidæ), are the great destroyers of aphides, on which these beetles, both in their larval and perfect states, feed with the utmost voracity, and no better precaution can be taken against the attacks of "blight" than the colonisation of lady birds in our gardens. Another most valuable insect ally for this purpose is the common gauze-wing fly, sometimes called the "stink fly" (Chrysopa perla). It is well known in gardens, is delicate green in colour, has a long, thin body, four very delicate wings, and two exceedingly bright golden eyes. When handled it imparts to the fingers a most disgusting scent ; hence its name of Stink fly. This fly in the perfect state preys on the aphis, hovering over the infested plants, alighting from time to time to snatch up some of its living food ; but it is in the larval state that it does the most execution.

Among beetles we have many enemies, notably among whom may be mentioned the skipjacks (Elateridæ), known in their larval condition as wireworms ; the May bugs and their allies (Melolonthidæ) ; the weevils (Curculionidæ), attacking corn, &c., in store ; the corn beetle (Trogosita Mauritanica) ; the mealworm, another of the same family ; the pea beetles (Bruchidæ) ; the pea weevils (Sitonidæ) ; the wood-boring Hylesinidæ, of which the Scolytus destructor, too well known in our parks, is a good example ; the family of Longicornes, deadly enemies of forest trees ; and the Chrysomelidæ or golden apple beetles. It is evident the limits of this paper would not permit me to give a life history of each of these destroyers. They are, with a host of others I have not enumerated, formidable destroyers, largely and directly affecting the profits of the farmer, though very frequently he has no idea of the cause of the failure of his crop, perhaps does not even know of the existence of the tiny ravager who has robbed him of the fruit of his toil. Take, for instance, the wireworm. This (Agriotes lineatus), in its perfect state, is a narrow brown beetle about two-fifths of an inch long, with long wing cases or elytra covered with parallel lines. They present somewhat a flattened appearance, and the thorax is produced into spines at the hinder angles, and underneath the breast plate is produced into a long point. They are remarkable for their great power, when placed on their back, of jumping or throwing themselves into the air by means of a sudden jerk of the thorax, in effecting which the thoracic prolongations come into their places with a sharp sound like the shutting of a spring. Hence their popular name of click beetles or skipjacks. In the perfect state it is probable the beetle does little or no harm to the crops, but in the larval stage it is most formidable. The larva is something like the mealworm, but more slender and elongated ; it is yellow and exceedingly tough, like wire, whence its familiar name of wireworm. They have, I believe, no eyes, but possess a short, four-jointed antennæ, and are furnished with short robust legs set close together. The apical segment, possessing an anal prolongation, is specially hard and frequently toothed ; they are found everywhere at the roots of plants.

The attacks of wireworms are most serious to Sainfoin and Clover crops, also to pasture lands, the finer grasses being invariably chosen, and the frequent failure of the grass seeds results probably more often from the work of the wireworm than from any other cause. It is throughout the United Kingdom a continual source of harm and loss to every description of corn crops. The wireworms fix their heads into the soft part of the stems, and with their hard, strong jaws gnaw away the tissues so as to entirely arrest the circulation of the sap. The insect remains in the larval state for several years (the limit generally accorded is five years), but it is difficult to ascertain the exact period. It is this long larval stage that causes them to be specially dangerous to those crops, such as Sainfoin, that remain on the land two or three years. When full grown the larva descends deep into the earth to undergo its transformation. It remains for a fortnight in the pupa condition, when the perfect insect emerges and comes to the surface of the ground. Fortunately this pest may be got rid of. A field that is infested with it should be thoroughly and deeply ploughed and scarified, and all growth in the soil rigidly destroyed. It should then lie fallow for a winter, and in the spring again carefully gone over to stop all weed growth, then be sown with tares. After this a crop of Mustard should be put in, and the wireworm will be effectually starved out, for numerous experiments have proved that it cannot eat either of these plants.

Other classes of insect enemies are the Cecidomiters or midges, of which the little Wheat midge may be seen at most seasons flying in swarms on the edge of Wheat fields. These later on deposit their eggs within the Wheat ears. The eggs soon hatch out little white maggots, which then bury themselves into the stigmata of the flowers of the Wheat plant, thus hindering the development of the grain, and frequently reducing the crop by a fifth or more. In some years the amount of destruction occasioned by it is very great.

Another most mischievous insect and very troublesome to get rid of is the well-known daddy-longlegs (Tipula oleracea). The female fly is stated by Curtis to contain some 300 eggs, forming a mass which fills nearly the whole of the abdomen. These she deposits in the autumn on

the grass, they hatch out in the early spring, and burying themselves into the ground soon grow into dirty-looking grubs an inch long, having very tough skins. They are destitute of legs, but still have the power of burrowing rapidly in the ground. They make their burrows a little below the surface of the ground and among the roots of the grass on which they feed. So actively do they work and feed that they quickly kill off a patch of grass, and their presence underground is then made known by an ugly brown dead patch on lawn or field. The best remedies we can avail ourselves of against these pests are the birds, especially rooks and starlings, and also the much-slandered moles, which, as devourers of grubs of all sorts, wireworms, &c., are simply invaluable, and should be cherished instead of being killed and trapped as noxious vermin.

The injury we suffer from the caterpillars of moths and butterflies is probably much better known than that caused by other classes of insects; still, the ignorance of gardeners and cultivators regarding these creatures, which are comparatively so easy of observation, is astounding. Among the lesser known, but not the less dangerous on that account, are the caterpillars feeding in the interior of the stems of various plants and shrubs; one of these, the clearwing moth larva, will serve as an example. The moth is small, having more the appearance of a fly than a moth, its wings being almost destitute of scales; it lays its eggs on the bark of Currant bushes. The larva on emerging from the egg immediately eats into the middle of the stem and then continues eating its way along the pith, always working upwards. It goes on feeding the whole of the autumn and a good portion of the winter, and emerges as a moth the next summer. When a bush is attacked by this creature nothing can save it, and the only thing to be done is at once to cut away right down to the ground all the doubtful stems, and carefully burn them. This should be done in the winter.

I have now touched in the most superficial manner upon four only out of the thirteen orders of insects, but I have more than exhausted my space and I fear my readers' patience. If, however, any remarks of mine shall induce anyone to study and observe the lives of these creatures that are competing with us for our food, I feel sure I shall have done some good. The field of research into the lives and habits of insects is open to all, and the knowledge to be gained is probably of far more importance to the world and likely to result in more direct gain to mankind than most of us dream of.



HARDY FRUIT GARDEN.

Seasonable Work.—In most large gardens much of the pruning has already been done, and those in charge of smaller places ought also to push forward this important work much earlier than they often do When the bushes and trees in the open are pruned early this admits of the manuring and surface digging being also completed before the men are required for other work. Many of the wall trees, in fact all but Peaches, Nectarines, and Figs, may also be pruned, and the nailing or tying attended to while the weather is favourable. Trees that are of vigorous habit and not very fruitful require no manure, but directly they arrive at a free-bearing state they ought to receive some assistance the better to maintain their fertility. Much-starved and stunted trees, these invariably attempting to produce heavy crops annually, absolutely require liberal treatment at the roots, otherwise they are unprofitable. Nor should Currants, Gooseberries, and Raspberries be neglected, these when of good size well repaying for mulchings or top-dressings of manure every year, or at least every second season. Nothing suits fruit trees generally better than a liberal dressing of partially decayed vegetable matter, such as a mixture of leaves, garden refuse, stable manure, and the contents of a "smother," or the heap of ashes and charred substances resulting from the slow burning of a great mass of rubbish and soil. Where leaves and manure are collected every winter, in the first place to afford bottom heat for forcing vegetables, and subsequently for growing Vegetable Marrows and ridge Cucumbers, this will be in admirable condition for present use. The ground about fruit trees and bushes ought never to be deeply dug, nor should spades be used near them. No harm will result from lightly skimming the surface with forks, the manure or top-dressing being turned in at the same time. In many instances it is advisable to just bare the topmost roots of choice fruit trees to a distance of not less than 4 feet from the stems; and after a liberal top-dressing has been given to surface this over with the soil thrown back. This is preferable to either digging-in the top-dressing or leaving it exposed, and the roots soon take possession of it, a marked improvement in the quality and weight of the crops being the sure consequence.

Pears.—These amongst wall trees are usually the first to be pruned and re-nailed or otherwise secured to the walls. In the case of well established trees the operation is very simple. All that is necessary is to thin out the spurs where at all thick, the longest and those not well furnished with fruit buds being selected for removal. These should be cut cleanly either with a pruning saw or sharp knife, and to within an inch of the main stems. Many of the old and ugly spurs thus treated will form fresh growths, and in time a cluster of fruiting spurs will be formed nearly close to the stems, or where they will get the full benefit of the shelter and heat afforded by the walls. Young shoots on fairly close and good fruiting spurs, whether they were shortened in the summer or not, ought now to be pruned, not being left much more than 1 inch in length. Occasionally branches about 5 inches in length with a fruit bud at the point will be met with, and these may be preserved, especially if there are but few fruit buds discernible on the trees. These can be duly shortened next autumn or winter, or after their retention is of no further use, but rather a disfigurement. It is very unwise to crowd the main branches, and where they are less than 12 inches apart (and it is no uncommon thing to see them not more than 8 inches apart) they ought to be considerably reduced in number, and the regulated so as to arrange them nearer 15 inches apart. The larger leaved varieties especially pay well for a little extra space being given them.

Young Pear Trees.—Where more wall or trellis space remains to be furnished by espalier or horizontally trained trees, the leading branch of this should be shortened to a length of about 15 inches, this being required to provide another leader and two more side branches for laying in. It is not advisable to shorten the leader or any of the side branches till such time as their limit is reached, the only exception being where the second or summer shoot that some of them form is unripe, and which should be shortened to the well ripened portion. When strong leading shoots are shortened, however slightly, only the buds near the point can be depended upon to break, and then only wood is formed, whereas those well-ripened growths not pruned will usually break at every joint, not unfrequently forming a series of fruit buds. This fact should not be lost sight of by those who are commencing to train Pears on what is known as the cordon system. Whether the cordon-trained trees are confined to one stem, or better still, are furnished with from three to six main branches, the treatment is much the same, and is extremely simple. Allow the well-ripened leading shoots to extend as rapidly as possible, and if not unduly pruned, fruitfulness soon results. Quite young lateral growths should be well shortened back, and in time abundance of good fruiting spurs will result. The stems and main branches of healthy young Pear trees swell considerably in one season, and unless the various ligatures used in training and securing them are closely looked to, injury may and very often does accrue to the bark. The latter ought never to come into contact with nails especially or other hard substances, or it is almost certain to be injured either by friction or pressure, while quite a soft shred will nearly cut through a stem unless removed in time. The shreds or ties ought not to be very tight in the first instance, and should be removed directly it is seen they are likely soon to unduly prevent expansion. Broad leather or stout "trousering cords" are the best for heavy Pear trees, ordinary cloth shreds being of little avail for other than young wood. When wire trellising is used for training and supporting the trees, stout tar-twine is the best tying material, and young pliable Willow growths are frequently used for fastening the trees.

Simple Method of Inducing Fruitfulness.—Much restricted trees on the Pear stock usually form much surplus growth, and if this is annually hard pruned very little fruit results. In all cases where trees on the natural stock are planted, it is advisable to give these good room for extension, or otherwise nothing but severe root-prunings will cause fruitfulness. The simplest method of inducing a free bearing habit, where formerly nothing but wood was formed, is to adopt a complete change in the style of pruning. Instead of cutting back, or even only lightly pruning the young growth, be content to merely thin out freely, leaving well ripened fairly strong shoots wherever there is good room for them to develope. This need not disfigure the trees, but on the contrary, the exercise of a little judgment will give them a more attractive appearance, as well as considerably extend the fruiting area. Nearly all the unpruned branches will, during the coming year, become thickly set with fruit buds, and in all probability this treatment will rapidly lead to a general fruitful habit. The thinning must be persevered with, and two-year-old shoots may be prevented from extending when once got into a free bearing state. These remarks apply to either pyramid, bush, or standard trees.

FRUIT FORCING.

Figs.—*Early Trees in Pots.*—When the terminal buds have fairly started advantage may be taken of mild weather for increasing the temperature, as the Fig delights in a good heat, plenty of moisture, and all the light that can be secured. The increased temperature will be the more beneficial if it can be obtained from heat combined with solar influence by day in preference to making any great advance by night, The glass under any circumstances should be kept clean and as free as possible from condensed moisture by changing the atmosphere, especially in the early part of the day. Syringe the trees and walls twice a day according to the state of the weather, and damp the floors in the evening when the weather is dull and unfavourable to the afternoon syringing. See to the fermenting material, and if the heat exceeds 70° to 75° turn the material over as a means of reducing the bottom heat, and setting moisture at liberty. Maintain the night temperature at 55° to 60°, give a little air at 65° when the morning gives promise of an increase from sunshine, and keep through the day under sun heat at 70° to 75°, closing sufficiently early for the heat to rise to 80°.

Early Forced Planted-out Trees.—If the house has been closed and a good body of fermenting material has been introduced but little fire heat will be required by night until the buds show signs of growing, particularly when the trees have been started about the same time for a number of years, but in the case of young trees that have not been forced they will require a somewhat higher temperature to cause them to break freely. Syringe twice a day with tepid water or a few degrees warmer than that of the house, and if found necessary to supply water at the roots use it at a temperature of 80° to 90°.

Succession and Late Houses.—Thin the wood that has reached the extremity of the trellis, wash the trees with warm soapy water, and in the case of scale having appeared a wineglassful of petroleum to a gallon of water may be added with advantage. Thoroughly cleanse the woodwork and glass, and limewash the walls. Remove the old mulching if not already done, and supply a layer of good manure about 3 inches thick. Keep the house cool and dry.

Young Pot Trees.—Prepare for potting young plants intended for fruiting twelve months hence, using good fibrous loam with a fifth of old mortar rubbish, and a sixth of thoroughly decayed cowdung. Train to a clean, straight, single stem, and allow the radiating shoots to form the foundation of a good pyramid. If wanted for early work another season they should be placed in gentle bottom heat by the middle of January in order that they make and thoroughly ripen their growth by the early part of September, it being essential that they have a few weeks' rest before being again started into growth. Cuttings or eyes of kinds to be increased may now be inserted.

PINES.—In most establishments where Pine Apples are grown there is a demand for ripe fruit in May and June. It will be necessary to take into consideration the present condition of plants that are to afford that supply. Where there was a good show of fruit of such varieties as Smooth-leaved Cayenne, Charlotte Rothschild, Black Jamaica, Montserrat, with Black Prince in October and November, the necessity of starting plants now will not be so imperative as where there was not a sufficient number of those varieties showing fruit at the time named, and as fruit of those indicated starting now will not be ripe at the requisite time, plants of the Queen, Enville, and Providence varieties, which require less time to arrive at perfection, should be induced to start their fruit. Select from the successional stock plants that have been subjected to somewhat cool and dry treatment, choosing those that have an enlarged base with a tendency to open in the centre. Place in a light house or pit, and plunge them in a brisk bottom heat of 85° or 90°, the atmospheric heat ranging between 60° and 70° at night, according to external conditions, allowing from 5° to 10° more by day. A genial atmospheric moisture must be kept up about the plants, but not by steaming from the hot-water pipes or syringing the bed between the plants, but by occasionally damping cool surfaces about the house. The soil must be examined once a week, employing tepid water with a little guano or other approved stimulant in it, applying it copiously when needed, and at no other time.

CUCUMBERS.—Young plants coming into bearing should not be overcropped, assisting them by removing unnecessary fruit blossoms, also male flowers and tendrils. Plants bearing will require to be trimmed at least twice a week, removing all weakly and exhausted growths, reserving as much of the young growths as have space for expanding their foliage. Stop the shoots one or two joints beyond the fruit, but young plants should be allowed more freedom, laying the foundation of a well-furnished plant, avoiding overcrowding. In mild weather the temperature should be 65° to 70° at night. In severe weather 60° to 65° at night is more suitable, by day 70° to 75° with a rise of 10° from sun heat, admitting a little air at 80° if the outside air be moderately warm and soft, but if cold and sharp it is better to allow the temperature to advance a little higher than admit cold air even when the sun is powerful; if the heat is turned off when there is hot sun it will do much to lessen the necessity for ventilation. A little flowers of sulphur dusted on the foliage and hot-water pipes is a good preventive of mildew and red spider. Quicklime rubbed well into the parts affected with canker will subdue it. The floors will need damping in the morning and early afternoon.

Raising Plants.—Sow now or early in the new year for raising plants to put out in pits or frames early in February, which are heated by hot water or fermenting materials. If no convenience exists for raising the plants a bed of fermenting materials should be made forthwith, the seed to be sown as soon as the frame affords a temperature of 70° to 75°. The plants from this sowing will be available for planting to afford a late spring and early summer supply of fruit, either in houses, in hot-water heated pits, or in pits or frames heated by fermenting material under good treatment, fruit being forthcoming in March and early April. No variety surpasses a carefully selected stock of Telegraph for general use, and Cardiff Castle is excellent both in crop and constitution.

MELONS.—Seed to afford plants for the first crop may be sown now, or early in the new year. Fruit from this sowing may be expected in late April or early May. Sow singly in 3-inch pots, filling the pots about half full of soil moderately light in texture, which will allow of soil being added as the seedlings advance, strengthening them wonderfully. They should be kept near the glass, the object being to insure a short stem and sturdy growth. A temperature of 65° to 70° at night and 70° to 75° by day is suitable. Blenheim Orange, scarlet flesh, and Longleat Perfection, whitish flesh, are excellent varieties.

TOMATOES.—Where plants have not been raised from cuttings made in autumn, sow seed now rather thinly in light soil, and place in a house where there is a temperature of 55° to 60°. We prefer to sow singly in 3-inch pots half filled with soil, and to place them near the glass. The plants are earthed as they require it, and are transferred to 5-inch pots, keeping them well down in the pots. From these they are transferred to the bed, which insures a depth of about 12 inches for soil, the part under being rubble, over and surrounding the hot-water pipes—in fact, the exact counterpart of a Cucumber house. The bottom heat makes much difference, just as it does with Cucumbers, especially for winter and early crops, but it is not essential. The plants should be encouraged to make a sturdy growth, keeping them when in the pots well up the light. Plant them out when they have filled the 5-inch pots with roots in ridges the whole length of the house and about one foot wide at the top, had in some few days to warm and down to the first leaves, making the soil firm, so as to insure a sturdy growth. The plants must be 18 inches apart. Train to wires a foot from the glass with one stem, keeping off all side shoots, and the plants will be single cordons. Fruit will show right along, therefore stop only when the last truss is gained on the extent of the space. Good loam with a fifth of well decayed manure will grow them well, but some lime rubble, a little wood ashes and charcoal are advantageous. A 2-foot width of border is ample, the plants being earthed as the roots protrude. Surface dressing and liquid manure can be given when the roots have possession of the soil. When the first cordons are ripening the first clusters of fruit, a shoot can be encouraged from the base, and it can be taken up so as to succeed the one advanced in fruiting, and a successional supply of fruit thereby be maintained for a lengthened period.

Growing in Pots.—Instead of planting out the Tomatoes can from the 5-inch be transferred to 10-inch pots, placing the base of the ball on the drainage or a very little soil over it, which will leave space for surface dressings. They are to be treated similarly to the other plants.

Cutting Plants.—We prefer these for early fruiting. The cuttings are struck in September, kept near to the glass in 5-inch pots in a temperature of 60° to 65°, with 10° advance from sun heat. The plants get tall, but that makes no matter as we prepare the ridges as before stated, and by the middle of December or before the new year the plants are showing trusses of bloom, and we layer them in the ridges at the required distance at the joint below the truss of bloom, the plants being kept in the pots until the layer is well rooted and then detached. In consequence we have fruit from the lowest part of the plants, and they fruit right away. Those for pots are layered into their larger sized pots, they being about one-third or half filled with soil, the bending over not interfering with the work of layering, only it must be done carefully. The 5-inch pots can be raised so as to facilitate layering into the fruiting pots. The cutting plants fruit earlier and give as a rule better shaped fruit than those from seed. Afford a night temperature of 55° to 60°, 60° to 65° by day, and 70° to 75° from sun heat, ventilating from 65°. In dull damp weather a crack of air should be left on constantly, as a close atmosphere is very enfeebling. When in flower ventilate and rap the base of the trusses in flower to distribute the pollen. Fully one-third of each leaf should be pinched away, as it assists the fruit in swelling, practising it early.

THE BEE-KEEPER.

CHRISTMAS.

To the Editor and to all our friends a Christmas greeting. Again a year has sped, the wings of time have carried us over another spring, and summer, and autumn. The book of the past lies open to our view; the book of the future lies before us, and its unsullied pages mock our most anxious inquiries. New hopes, new expectations cheer us on our way, and failure in the past only spurs us on to hope for success in the time to come. The old year is in the throes of death, the new year is not yet born, but soon the old year and the new-born season must meet in close embrace, and then must part for ever. As the changing seasons give place one to another, so 1888 and 1889 must meet, and then the old year is left behind, and the new year pregnant with great issues grows on apace. But with us the case is otherwise. The efforts of the past can only bear fruit in the future; the tree planted in the present year will give no return until a new year's sun has coaxed it into growth; the stock of bees so carefully tended last autumn lies inactive and without profit to us until the sun of the future spring time rises high in the heavens and causes the myriad flowers and blossoms to yield their harvest of nectar to

delight him to whom the bees themselves must look for help in the dead time of winter. From the ice-bound earth will soon arise plant life, and soon the lambs and other living creatures will begin once more to herald the approach of the more temperate months, while the lengthening days will give us more time in which to perform the manifold duties cast upon us.

Such are the thoughts of many who give themselves time for reflection at this period of the year. Each one may learn a lesson which will be of value in the future by showing how much depends upon the past. Bee-keepers look back on the summer of the present year with some regret. The spring was unusually severe and long, and when at last hopes were aroused it was only for a few days, when once more a spell of cold and wet dashed to the ground the unrealised expectations and left some with a scanty surplus, and compelled many even to give a supply of food to tide over the then present fear of actual starvation. On the other hand, and perhaps as a direct consequence of lessened production, we find that higher prices have prevailed, and accordingly some bee-keepers have from a moderate yield reaped a profit even greater than they would have done had the season been more favourable.

Some new ideas, or at any rate some ideas which seem likely to be carried out in a practical form, have been brought to the front during the present year, and first amongst these we should be inclined to place "A Hallamshire Bee-keeper's" glass sections, although we have not yet had an opportunity of seeing one of them. The beauty of glass vessels is well known, and it is impossible to imagine a fairer sight than pure honeycomb in good clear glass, showing every tint and shade of the honey in the cells adjoining the glass, and showing to the very best advantage the skilled work of the delicate bee. For cleanliness and beauty the idea can certainly not be surpassed; but, on the other hand, the expense must be kept down, otherwise we fear that the sordid public of to-day will prefer to buy a cheaper yet wholesome package. The craze for low prices puts a heavy brake on our utmost efforts, and yet we can see that beauty is not slightly regarded by the most economical, provided the sum they have to pay in order to obtain a goodly appearance is not too high. In large towns, where there are many wealthy merchants and others, the price of a package of honey is not material, but the dealers in smaller districts inform us that, provided the honey is good and pure, the purchaser does not pay as much attention as we should expect to the form of the vessel. We earnestly hope that the glass sections may be introduced, and that they will be sold at as low a price as possible, having regard to the profit due to those who have an interest in their production and sale.

What of the future? There is no need to despair. Our prospects, on the whole, are as good as they were at this time twelve months ago. If bee-keepers did not attend to their bees in the summer and autumn, they must not forget that the man who sows thistles will reap thistles, and the man who sows corn will reap corn. With proper care every stock should be in good condition now, and unless the queen dies in the coming months of spring should be ready to take part in the early harvesting operations which are generally commenced in May. Weakly stocks are, broadly speaking, not profitable; with care they may sometimes do well, and as "A Lanarkshire Bee-keeper" has shown, in some cases they have given very good results; but the oft-reiterated advice to keep strong stocks only is still the one which we shall offer, although there are circumstances in which it may be not only wise but essential to keep a small stock for the sake of the queen, which must otherwise be destroyed.

Spare queens in the coming spring will be very valuable. We had not intended to venture into the region of prophecy, but we fear that many queens will be found wanting before the end of April, and special care and attention will consequently be required to avert evil results. What to do in these cases must occupy attention in the issue of another week. Another feature of the present year has been the increased neatness in which honey has been put upon the market. The slovenliness of the past has been swept away, and fair white sections and clear glass bottles may now be seen where once were found sections of a very doubtful colour and pots and mugs of a decidedly unappetising hue. We have been led to write at further length than it was our intention to do, and in closing we may assure bee-keepers that the honey yield of the past year was phenomenally bad, and that there is no reasonable fear of being visited with such another for some seasons yet to come.

It would seem that every subject must be exhausted after writing for two or three years with some regularity upon the same industry, but in the future we hope to be able to find something of interest and of importance to write about for the good of bee-keepers in general; and it is a special pleasure to notice that the regular contributors to the bee-keeping columns agree—if not in all points, at any rate in the main—with one another, and even when points of disagreement are discussed they are discussed with courtesy and without unnecessary fervour.—FELIX.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Unanswered Letters (*To Inquirers*).—In consequence of the Christmas holidays the pages of the present issue of the Journal had to be made up last Friday, therefore answers to some questions are of necessity deferred.

Books on Botany (*R. C., Newcastle*).—You will find the following works useful, taking them in the order named as you advance:—Sir J. D. Hooker's "Botany Primer" (Macmillan & Co., Bedford Street, Strand, London); Professor Oliver's "Elementary Botany," published by the same firm; and Henfrey and Masters' "Course of Botany" (Van Voorst, 1, Paternoster Row, E.C.). You will probably find the first two sufficient at first, and they can be purchased for 5s. The other is a much more expensive work. In studying botany you must not rely upon books alone, but strive to gain a practical knowledge by closely examining all the plants possible, and endeavour to understand their structure. One of the great advantages of attention to botany is that it cultivates the powers of observation, no mean help to a person in any employment.

Oxalis Culture (*O. S. W.*).—Of the easiest culture, we are surprised you cannot induce them to flower, and grow luxuriantly. It appears you give them too liberal treatment, and keep in the shade at some distance from the glass in a shaded and moist position. Grow them on shelves near the glass, potting when they are beginning to grow in a mixture of three parts light fibrous loam, one part leaf soil, and two parts sandy peat, with a part of silver sand, watering moderately until in free growth, increasing the supply with the growth, and after flowering, or the growth is complete, diminish the supply, ceasing watering when the leaves become yellow, and keeping dry until the plants again start into growth. They do well in a light airy position in a greenhouse. Their great bane is too much water and shade.

Poinsettia Treatment after Flowering (*Amateur*).—Keep the plants dry, not allowing the wood to shrivel, and cut down in March, inserting what cuttings are required, selecting the firm ripe wood, and strike in brisk bottom heat. The temperature after flowering should be 50° from fire heat, and 5° higher by day from the same means. Water moderately after the plants are started into growth, sprinkling the stems twice daily, which will be sufficient moisture to cause them to start into

growth, and repot when the plants have shoots an inch long. A moist atmosphere, with careful watering at the roots, taking care not to overwater nor to allow the plants to flag, keeping near the glass, and well ventilated, so as to induce a sturdy growth, and a temperature 55° to 60° from fire heat, and 10° to 15° or 20° rise from sun, keeping lower and drier after early August.

Forcing Imported Lily of the Valley (*W. R.*).—It is not unusual for imported clumps to remain dormant if placed, immediately after potting, in a high temperature. Pot and plunge them in a bottom heat of 75° and not exceeding 90°, and cover with inverted flower pots, taking care that the soil does not become dry. Every crown will grow, and when the spikes are about 5 or 6 inches high then withdraw the pots from the hotbed and place them in a house with a temperature of 65° by day and 55° at night, in which they will expand the flowers and develope the foliage. In the new year they will succeed admirably in a vinery started at that time; but the plants must be brought on gradually with the Vines or they will remain dormant or go "blind," which is obviated by bottom heat or a rising temperature, commencing from a low one. Several articles have been published on this subject recently. See pp. 488 and 512.

Asparagus Neglected (*A. F.*).—Your best plan will be to prepare a piece of ground by trenching and enriching with manure. This to be done as soon as possible, so that it can be exposed to the action of frost, and early in the spring, when sufficiently dry to work cleanly, fork it well over again so as to bring it into a loose friable condition. Immediately you perceive the Asparagus above ground fork up the roots carefully by undermining them, and plant them again in the new bed. This work must be done with as little exposure as possible to the roots. If they are transferred without being dried during the process of removal, and are planted in drills or trenches sufficiently wide so that the roots can be spread out without being doubled, and an inch or two of light soil, such as decayed leaves or vegetable soil, is worked amongst them, levelling-in with the ordinary soil and watering with tepid water, they will grow. They will not grow with certainty if removed when in a dormant state, and you cannot eradicate the weeds without digging up the Asparagus.

Pruning in Winter and Spring (*Staples*).—The pruning of all kinds of fruit trees and bushes may be completed if the weather is not too severe. A little frost renders the ground clean for the operator, but we prefer warmer days as a rule for pruning, yet where there is much of such work to be done it is sometimes necessary to do it during the cold winter days. Peaches and Nectarines on walls may be left until the early part of the new year, when it is advisable to unfasten them and allow them to remain from the walls as long as it is possible in order to retard their time of blooming. Plums do well on the spur system generally, and should have all natural spurs retained. Cherries bear their fruit in exactly the same way, but with Morellos the wood oftentimes becomes so thick as to exclude light unless judiciously thinned out from the centre of the bushes. Black Currants produce their fruit generally from the young wood of the past season. Young growths, therefore, should by all means be encouraged, merely removing some of the old shoots to open the centre of the bushes, and shortening the points of straggling shoots, which is all the pruning the bushes require. Red and White Currants bear their fruit principally on spurs, it is therefore advisable to prune these much closer than the Black varieties. Gooseberries carry their fruit in a similar manner, producing it on both the spurs and on the past summer's growth; therefore retain a sufficient number of young shoots at moderate and regular distances apart, keeping the centre of the bushes open that the sun and air may act on as large a surface of foliage as possible.

Horseradish Culture (*Inquirer*). — The number required has been long out of print, but the information given by an experienced grower was as follows:—As soon as the leaves are off the plants in October or November we take out a trench at one end of the bed, as is usual in ordinary trenching, and by means of fork and spade turn over the whole of the bed down to the clay, carefully picking out the roots as whole as possible, and manuring as the process goes on. The bed is then made level ready for replanting. The roots are then looked over; all that is fit for kitchen use are dressed and laid aside for that purpose, and all the long thin roots of the thickness of a quill stripped of all side roots are laid in bundles for replanting. With a long dibber (or an ordinary Dahlia stick will do), make holes 18 inches or 2 feet deep, 6 inches apart, and 1 foot between the rows. Into each of these holes we drop one of these long roots, and then fill the hole up with fine dry soil from under the potting bench. These make nice useable roots the first season, but of course if they were left for two seasons they would be much better. This annual planting has many advantages. In the first place, a very small bed will grow sufficient for the supply of most families. This struck me very forcibly on entering a very old kitchen garden a few months ago, where was to be seen a bed of Horseradish some 15 yards long by 5 or 6 wide, which apparently had not been disturbed, except in digging roots up for use, for fifteen or twenty years. In contrast to this we have dug from a bed 15 feet by 8 sufficient good roots to supply an ordinary family for twelve months. In the second place, the ground is being cultivated. It is annually improving; and the plants being in rows, it can be kept clean by means of hoeing, the same as any other crops, instead of becoming a nest of weeds, as is too often the case; for it is no uncommon thing to find weeds seeding in the Horseradish bed at places where they would not be tolerated anywhere else. In the third place, there is no such thing as shouldering a pick when grim John Frost resists the spade in the gloomy winter months. The roots are laid regular in layers one above another with soil between, covered over with soil. A little litter keeps out frost and mice. It is always accessible without the aid of either pick or spade.

Raising Ash Trees from Seed (*V. R.*).—Raising the trees from seeds appears to be a much slower process than you imagine, and they must be prepared in a very different manner from that indicated in your letter. Sowing on land infested with twitch would result in failure, especially as the seed is long in germinating the twitch would inevitably gain the ascendancy over the seedlings. In Brown's "Forester" the following instructions are given on this subject:—"The seeds of the Ash are enclosed in what is termed samaras or keys, which are generally ripe for gathering about the end of October. When gathered for the purpose of sowing, the seeds should be mixed with a quantity of dry sand or light dry earth, in which they should be kept for eighteen months, in order to rot off the outer coat; and in order the more effectually to insure this, the whole mass of seeds and sand should be turned every three months. This mass of sand and seed should not be much over 1 foot in depth, as, if more, it will be liable to heat, and in consequence the vitality of the seed would be injured. In the second March after they are gathered the seeds should be sown in rows rather thinly, and upon any moderately well pulverised soil. They are sure to come up thickly and confine one another if not sown thin, and the covering of earth should not exceed three-quarters of an inch. In the following spring the plants will be ready for being transplanted into the nursery rows, which may be 15 inches one from another, and 4 inches plant from plant in the rows. When the plants have stood two years in the nursery rows they may be removed and transplanted into the forest ground; but if wanted of a larger size they may be left a year longer." Would it not be better to purchase the requisite number of trees of different kinds for planting? This is the usual custom, unless time is of little moment. In any case you will find it advantageous to have the land thoroughly cleaned, then if the ground is planted, a crop of Potatoes might be grown between the trees for a year or two, which would partially defray the cost of the work, and the working of the ground in planting and digging up the crops would be favourable to the growth of the trees and prevent the luxuriant growth of twitch. We have established plantations very much larger than that you contemplate in the manner alluded to, and the results were perfectly satisfactory.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J., Surrey*). — 1, Adiantum tenerum; 2, Asplenium bulbiferum; 3, Asplenium cicutarium; 4, Nephrolepis tuberosa. (*W. R. S.*).— 1, Odontoglossum Rossi majus; 2, Masdevallia Lindeni; 3, Lælia autumnalis; 4, Lælia anceps; 5, Zygopetalum crinitum. (*Reader*).— 1, Adiantum trapeziforme; 2, Pteris serrulata; 3, Insufficient, without spores.

COVENT GARDEN MARKET.—DECEMBER 26TH.

NO alteration. All classes of goods well supplied.

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches ..	3	0	to	6	0
Arum Lilies, 12 blooms ..	4	0		8	0
Astere, dozen bunches ..	0	0		9	0
Azalea, 12 eprays	0	9		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms ..	3	0		4	0
Carnations, 12 blooms ..	1	0		2	0
Chrysanthemume, 12 bl...	1	0		3	0
,, 12 bche.	4	0		12	0
Cyclamen, dozen blooms	0	4		0	9
Dahliae, 12 bunches.. ..	0	0		0	0
Encharis, dozen	3	0		6	0
Gardenias, 12 blooms ..	4	0		9	0
Hyacinths (Roman), doz. eprays	1	0		1	6
Lapageria, 12 blooms ..	1	0		2	6
Lilac, White (French), per bunch	6	0		7	0
Lilium longiflorum, 12 blooms	4	0		6	0
Lily of the Valley, 12 eprays	1	6		4	0
Marguerites, 12 bunches	2	0	to	6	0
Mignonette, 12 bunches	2	0		4	0
Narcissus (Paper White), 12 spraye ..	1	0		1	6
,, (French) bunch	0	3		0	6
Polargoniume, 12 trneeee	1	0		1	6
,, scarlet, 12 trusses	6	0		9	0
Poinsettia, dozen blooms	4	0		6	0
Primroses, doz. bunchee..	1	0		2	0
Roees, Red, 12 blooms ..	1	0		2	0
,, (indoor), dozen ..	1	0		1	6
,, Tea, dozen	1	0		3	0
,, yellow	3	0		6	0
Stephanotis, 12 sprays ..	9	0		12	0
Tropæolnm, 12 bunches	1	0		2	0
Tuberoeee, 12 bloome ..	1	0		2	0
Violets, 12 bunchee.. ..	1	0		1	6
,, Parme (French), per bunch ..	3	6		5	0
,, (French) bunch..	1	6		2	0
Wallflowers, doz. bunches	4	0		6	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0
Arum Liliee, per dozen ..	12	0		18	0
Arbor vitæ (golden) dozen	12	0		24	0
Aeters, 12 pots..	0	0		0	0
Begonias, varioue, per doz.	4	0		9	0
Chryeanthemnm, doz. ..	4	0		9	0
,, large, doz. ..	15	0		24	0
Coleus, dozen	0	0		0	0
Cyclamen,, dozen pots ..	9	0		18	0
Dracæna terminalie, doz.	30	0		60	0
Dracenæ viridis, doz. ..	12	0		24	0
Erica hyemalis, doz. ..	12	0		24	0
,, gracilis, doz.	9	0		12	0
,, varioue, doz.	8	0		18	0
Enonymus, var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0	to	24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each ..	1	6		7	0
Foliage plante, var., each	2	0		10	0
Hyacinthe, per dozen ..	9	0		12	0
Hyacinthe (Roman), doz.	9	0		12	0
Lilium, various, doz. pots	0	0		0	0
Marguerite Daiey, dozen	6	0		12	0
Mignonette, per dozen ..	0	0		0	0
Myrtles, dozen	6	0		12	0
Palme, in var., each ..	2	6		21	0
Pelargoniums, scarlet, 12	6	0		9	0
Poinsettia, per dozen ..	10	0		15	0
Primnla, per doz.	4	0		6	0
Solanums, doz. .. .	9	0		15	0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Lemons, case	10 0	to 15 0
,, Nova Scotia and Canada, per barrel ..	10 0	19 0	Oranges, per 100	4 0	9 0
Cherries, ½ sieve	0 0	0 0	Peaches, dozen	0 0	0 0
Cobs, 100 lbs.	100 0	0 0	Pears, dozen	1 0	2 6
Grapes, per lb...	0 9	3 0	Plums, ½-sieve	0 0	0 0
			St. Michael Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	2 0	to 3 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet ..	0 6	1 0
Beans, Kidney, per lb. ..	0 10	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	New Potatoes, per cwt...	0 0	0 0
Broccoli, bundle	0 0	0 0	Onions, bunch..	0 3	0 0
Brussels Sprouts, ½ sieve	1 6	2 6	Parsley, dozen bunches	2 0	3 0
Cabbage, dozen	1 6	0 0	Parsnips, dozen	1 0	0 0
Capsicums, per 100 ..	0 0	0 0	Potatoes, per cwt... ..	4 0	5 0
Carrots, bunch	0 4	0 0	,, Kidney, per cwt.	4 0	8 0
Cauliflowers, dozen ..	1 0	2 0	Rhubarb, bundle	0 2	0 0
Celery, bundle	1 6	2 0	Salsify, bundle	1 0	1 6
Coleworts, doz. bunches	2 0	4 0	Scorzonera, bundle ..	1 6	0 0
Cucumbers, each	0 3	0 4	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 3	0 10
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0



LESSONS OF THE YEAR.

If it be true that in 1887 we reached the lowest depths of the agricultural depression, it is, we fear, equally true that the present year has witnessed no great improvement in the position of farmers generally. Adverse weather has, undoubtedly, been the chief cause of this, for if only we had been able to harvest and save the abundant grain crop in high condition, and have got a little more quality in the hay, there would certainly have been fair reason to record a decided improvement in agriculture all round. Horses, sheep, cattle, and pigs have all been profitable, and they continue so. The impetus given to dairy farming tends to a marked improvement in the home trade; really good samples of new Wheat command prices that approach closely the much-desired 40s. per quarter, and old Wheat was sold at really remunerative prices. The crops of Peas and Beans were very abundant; so, too, were Oats and Barley. But, though there was a full and perfect development of Barley grain, the trying changes of weather rendered it thick-skinned and discoloured, and prices have been disastrously low, to the serious loss of corn farmers. Wet weather spoilt much hay, and the entire crop is low in quality. Prices for good hay have naturally risen, but then very few farmers have good hay to sell. Root crops are very abundant, so abundant that many farmers are puzzled what to do with them, and are giving them to anyone who will put sheep on the land to consume them. Of course the proper thing is for more sheep to be purchased to be folded upon the Turnips, but a want of means prevents very many farmers from doing this, and they are unable to take advantage of their opportunity. We have seen some of the Turnips being chopped in pieces with hoes and ploughed in, and this will doubtless enrich the land for Barley, but it cannot answer to grow Turnips for such a purpose. A natural outcome of the abundance of roots and green crops was an increasing demand for sheep; prices have risen accordingly, and those who have sheep to sell find the trade very profitable.

Pigs have been more useful than usual, as they have been turned to excellent account to consume inferior Barley. It is matter for regret that the farmer is unable to derive the full benefit from pigs that is possible. What he really ought to do is to strive to get rid of all those who come between him and the consumer. If he would only be at the trouble to establish a trade for dairy fed pork, sausages, hams, bacon, and lard, he is bound to add greatly to his profits. "Live and let live," is, no doubt, a very good proverb rightly applied, but the farmer is justified in looking more closely after his own interests just as much as anyone else, and to ask him to refrain from interference with the pork butcher's trade is about as sensible as to assure him it is a point of duty with him to employ so much labour upon his farm. The farmer is not a philanthropist; he invests a certain amount of capital in land, and he is bound to get the best interest he can from his investment.

Throughout the year we have repeatedly heard much talk of the necessity for State aid, in the form of protection or fair trade; of an uniform rate of exchange throughout the dominions of the empire, in order to set aside the unfair advantage conferred upon the Hindoo ryot, by the difference in value of the rupee in England and in India; of relief in the burden of tithes and taxes upon the land; of tempting reforms promised by our rulers; of a minister of agriculture to give especial attention to our interests. But what has come of it all? why, literally nothing, and now, at the end of another year the farmer ought to see clearly that the best help of all for him is self help.

On December 10th, at the Surveyors' Institution, Mr. Wells read an interesting paper on "The Prospects of an Agricultural Revival." He gave elaborate details of Wheat culture by our foreign competitors in India, France, America, and Russia, and by comparison and otherwise strove to show that our prospects in future competitions with those countries were at least hopeful; but he had really nothing definite to go upon, and mere conjecture or fanciful deduction, however interesting, cannot be taken as a guide for action. He, in common with other optimists, said that there was more inquiry for farms, which we may assume by inference is to be taken as an indication of tenants being available for farms in hand. Well, now, we and several other land agents well known to us have many farms to let, but very few really desirable tenants were to be heard of last Michaelmas. It had just come to this in letting a farm, an agent dare not take any conclusive step about it till he obtains a satisfactory bankers' reference from a prospective tenant, and how few of them can pass satisfactorily through such an ordeal?

On the whole, then, if the end of another year has brought us to no higher degree of success, it has certainly brought no catastrophe in its wake, and we have still reason to be hopeful about the future. More than this, we are resolved, as we doubt not all our readers are, to leave nothing undone to render the new year a prosperous and successful one.

WORK ON THE HOME FARM.

The end of the year finds us with much more work upon our hands than usual, and we hope to have no snow yet, for we are doing our utmost to bring up arrears of ploughing. The past year will certainly be memorable for its late harvest and the late sowing of winter corn, which on the whole looks remarkably well. But we are anxious to plough every foot of land we can, both to be ready for spring work and to expose the soil to beneficial action of frost and snow. Steam tackle has been used to advantage this winter, but we object strongly to its reckless use in the same way upon all land. If we intend laying down land to permanent pasture we break up soil of every kind deeply with a steam cultivator. But for corn this plan does not answer, for if a cold clay subsoil is brought to the surface to be sown with corn in spring, it would indeed prove difficult to enrich it sufficiently to insure a crop. By all means stir the land deeply, but first turn over the surface furrow, and then turn up the subsoil, always keeping the surface furrow uppermost.

Glad indeed are we to see so much pipe draining being done this winter, for it is a sign that landlord and tenant are united in their efforts to improve the land. Depend upon it under-draining unlocks the soil and insures it full benefit from all subsequent culture. We are aware that farmers still exist who proclaim their disbelief in drainage; living examples are they of ignorance and conceit, who are not to be taught either by the lessons of experience or science. Keep the land water-logged, and all your efforts to enrich it with manure in view of obtaining full crops will be vain, for the wet soil continues cold, inert, and practically impervious to the air and warmth even in summer, and crops cannot thrive. Relieve it of water by judicious drains; air and warmth enter the very water itself as it passes through, and always leaves some addition to the store of fertility, and we have no difficulty in rendering most of the fertility in the soil active and useful for plant food. For heavy clay land bush drains are perhaps preferable, as they open up the soil better than pipes ever can do.